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Address.

OBSERVATIONS ON THE TEACHING OF CLINICAL MEDICINE.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PRACTICE OF MEDICINE AT THE FIFTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT NEW ORLEANS, MAY 5-8, 1903.

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BALTIMORE.

A hundred years ago the young American republic bought from the French government that great tract of land of which the little frontier city of Nouvelle Orleans was the chief settlement. It is a happy chance that brings us together on the centennial anniversary of the Louisiana Purchase in this metropolis of the south.

One hundred years—a small space of time in the world's history, and yet what events have been crowded into this little period! A hundred years ago the country west of the Mississippi was a wilderness. To-day we meet, a national body, the majority, perhaps, of our members coming from what was then forest and prairie, inhabited only by savage and wild beast. And the young democracy, then all but unknown to the powerful empires of the east, has become the dominating factor in the markets of the civilized world.

In this amazing growth and expansion, in this tremendous accumulation of wealth and strength and power, it was scarcely to be expected that our contributions to science would keep pace with those of the Old World, where accumulated wealth, settled conditions and well equipped institutions of learning naturally tempt the studious and contemplative mind to problems of science and research. And yet, how many of the great discoveries and inventions of the century have come from this new country! In our own branch of learning the record is one of which we may well be proud. The discovery of anæsthesia, the demonstration by Holmes of the contagiousness of puerperal infection, the studies by the students of Louis on typhoid fever, the accomplishments of Bigelow and Sims and McDowell and, lastly, the noble work of Reed, Lazear, Carroll and Agramonte in Cuba and of those who have demonstrated to the world the practical value of their great discoveries—these are but a few examples of an honorable record.

And during this period what a change has come over the condition of medical education in this country! One hundred years ago there were three schools of medicine in America: the Department of Medicine of the College of Philadelphia, the first school of medicine in the United States; the Medical School of Harvard College, and the Dartmouth Medical School of Hanover, N. H. To-day there are over one hundred and fifty.

One hundred years ago only the most favored and fortunate were able to receive anything like a systematic medical training. Not that there were not educated physicians in America. There were in Carolina and New England, in New York and Virginia and Pennsylvania men who had profited by the inspiration and opportunities offered in the best schools of Europe. Many a young man, however, was obliged to begin his studies by "reading medicine" in the office of some older practitioner. His theoretical knowledge was gained from a few books, his main instruction came through the practical observation of disease, gained by assisting at the operations and visits of his preceptor.

In some of our early medical schools the requirements were, however, such as may well surprise those of us who consider the fact that within fifteen years medical schools in this country were giving a degree of doctor of medicine for one year's study. "Although," says Thatcher in 1828 (American Med. Biography, 80, Boston, 1828) "there is no uniform standard of attainment established in order for graduation, in most of our schools it is required that before a student can be admitted to an examination for a degree he must have attained to the age of 21, have studied three years with some regular physician, attended two full courses of lectures on the different branches of medicine, and, if he has not enjoyed the advantages of a college education, he must furnish satisfactory evidence of having made respectable classical attainments, and particularly that he has acquired a competent knowledge of the Latin and Greek languages, has studied mathematics, natural and experimental philosophy, geography and belles lettres. In several of our schools it is required that he shall have attended the clinical practice of some infirmary for a specified term. It is also required that before he can receive his degree he must pass a close examination in the different branches of medicine and write and defend a thesis on some medical subject."

The first schools of medicine were, for the most part, founded in connection with hospitals, and the actual study and observation of the patient was an important part of the student's curriculum. The multiplication of medical schools, however, proceeded with great rapidity. The number of students in some of these institutions was so great as to preclude the possibility that each individual should have sufficient practical experience from the amount of clinical material at hand, while in other instances schools giving the degree of doctor of medicine were established entirely independently of hospitals or infirmaries. Ten years ago the requirements for admission to many of these schools were almost *nil*. It was not uncommon to hear that this or that good fellow whom one might have known but a day before as the driver of a horse car, had taken his degree in medicine. On investigation it might be found that for the past one or two years he had been attending evening classes, and at the end of this period had stepped from the platform of his car to the bedside of the patient with a degree attesting that he was a competent practitioner of medicine.

Within thirteen years I remember to have heard a colleague relate with pride that he had just accomplished in one year his whole course in medicine at a university with an old and honorable name, practically without clinical advantages. This is, to say no more, far from the ideals of our ancestors.

In the last few years, however, great changes have come into our methods of teaching. Four years' actual work in a medical institution are everywhere required. In our better schools anatomy, physiology, pathological anatomy, pharmacology are no longer taught as they used to be, by lectures to an untrained body of men. In many instances the student begins his medical studies with a training which has already taught him to think and investigate for himself; and our duty as teachers is coming to be rather that of guides and leaders than of simple lecturers.

The teacher to-day must be a student and investigator in his own line. The time is passing when the professor of anatomy or physiology can be a practitioner of medicine. His whole time must now be given to his studies and his teaching, and his immediate duties are not so much to lay facts before his students as to show the student how to find them out for himself.

And so it is in all these branches. The student in the laboratory sees, acts, controls, verifies. While of old he was expected and required to believe what was said to him, he is to-day taught rather to doubt that for which he can not obtain proof. And in like manner throughout the greater part of the course the didactic lecture is passing—such matters the student can read—and is being replaced by practical anatomical, physiological, pathological, pharmacological, experiment and experience. The same methods have come into the teaching of physical diagnosis in its restricted sense, as well as of minor surgery—lectures and demonstrations have largely given way to practical experience in small sections. In some of our schools the teaching in these branches compares with the best that can be found in the world.

But when we arrive at the last stage, the study of pathological physiology in the individual, the observation and care and treatment of the patient, we find, strangely enough, that the advances which have been made in our methods of instruction have not kept pace with those in the other branches. If there be one opportunity in the course of the study of medicine which it would seem most necessary for us to provide for our students, it should be the privilege of watching and studying at the bedside those diseases which they are most likely to meet with in practice. It was the first necessity recognized by our ancestors; it is the first necessity that would be appreciated by any non-medical man; and yet I believe that any one who investigates the matter will realize that it is one of the weakest points to-day in our American system of medical education.

What actual clinical experience does the average medical school of this country offer?

The clinical instruction offered in most of the better schools in this country consists in:

1. Exercises in physical diagnosis proper, which may include good practical work in small sections, but which commonly consist more of lectures and demonstrations than practice and experience.
2. Clinical lectures in which but few, if any, of the class approach the patient.
3. Ward visits which are too often infrequent.
4. Exercises in which students report individually on cases which have been assigned to them for study.

The requirement of a continuous service of students as assistants in hospital wards is almost unknown in this country.

The student who has graduated from such a school may, and often does, leave the institution with a fairly good training in methods of purely physical diagnosis. But how few of us in this room at the time we left the medical school, had ever followed a case of typhoid fever, pneumonia, measles or scarlet fever from beginning to end. And yet there is but one way by which one can learn to recognize and treat these diseases—and that is by bedside experience. Clinics, occasional visits, books and lectures, these weigh but little in the balance. If, as would seem to be the case, the medical records of our late war with Spain reveal a strange lack of familiarity on the part of many physicians with such important diseases as malarial and typhoid fevers, this is due largely to the failure of our medical schools to offer them the necessary bedside experience in the course of their early training.

And again, how few of us as students ever had brought practically before us the vital questions of when and how to administer stimulants in acute infectious diseases; whether, in any given emergency, those drugs should be given which raise or depress the blood pressure. But these are matters which may mean the life or death of the patient, and it is a sad fact that nothing is more common than the administration of nitroglycerin in conditions of profound vasomotor collapse by conscientious men who have missed in their education just that which early and well-directed clinical observation and experience might have brought them. This defect in our medical teaching is further emphasized when we compare the curriculum in most of our schools with that which is required in England and France. In London and Edinburgh, for instance, schools require of a student at least six months' service as a clinical clerk in the medical wards and a similar length of time as a dresser in the surgical department of the hospital. In Paris the student is required to give his whole morning to ward work of this nature for two years—one year in medicine, one in surgery.

That it is desirable that we in America should offer in our schools and require for our license to practice an amount of practical experience equal to that required in Europe is obvious.

Of the necessity for such requirements if we wish to keep pace with the progress of the world and properly educate our medical men there can be no question.

Of their practicability there can also be no doubt when we consider that such methods have been in force for many years in a country where individual liberties are as jealously guarded as they are in England.

Why is it, then, that so serious a defect exists?

The reasons are various and not altogether simple. The more important would seem to be:

1. The absence of state or national laws requiring such work.
2. The multiplicity of medical schools and the existence of many such institutions unconnected with hos-

pitals of sufficient size to furnish material for the instruction of the students.

3. A wide-spread prejudice existing in many hospitals against the admission of students to the wards and against the use of patients in general for purposes of instruction.

1. The first of these reasons is, of course, the most important. Until the states require such experience for a license to practice there will always be schools which will give a degree for less work. It is for us individually as physicians and collectively as we are associated in teaching bodies to strive to raise the standard and to hasten the day when such requirements are put in force.

2. It is the absence of these requirements which is, in great part, responsible for the multiplicity and inferior quality of some of our medical schools. With proper state regulations institutions unable to offer the requisite amount of bedside experience would of necessity go out of existence. The hospital is the most important part of a school of medicine, and that school which does not own or, to some extent, control a hospital sufficiently large to furnish practical experience for its students is not only incomplete, it is a pernicious and dangerous institution. It is greatly to be hoped that state or national laws, as well as the force of enlightened public opinion, may soon remedy the evils caused by the existence of such establishments.

3. As a matter of fact, however, most even of our larger and better supplied institutions do not, as they should, own or wholly control the hospitals on which they depend for clinical material, and the vague fear that the admission of students to the wards may prove prejudicial to the interests of patients or institution deprives these schools of an enormous amount of valuable material. That this fear is wholly without foundation is a fact which is clear enough to any one who has had experience with active ward teaching. But there is another side of the question, to which attention has recently been called by Dr. Osler,[*] which is of very great importance to the hospitals themselves. The duties of the house physician with the recent advances in methods of precision in diagnosis and study of disease in ward and laboratory, have in latter years increased to a degree that demands outside assistance if the patient is to be properly studied, properly watched, properly treated. Much of this work can be done better by advanced students than by any other class of assistants. To assign three or four advanced students as clinical clerks to a ward of twenty-five or thirty patients, letting each student be responsible for the history, the examination of the secretions, the general observation of four or five patients, under the control of the ward physician, is to give the physician invaluable assistance in the keeping of records, in accuracy of observation, in the detection of many points in the progress of the disease, points which may be, and often are, of vital importance to the patient. The admission of students to the wards of hospitals in this capacity is not only without harm to the patient but is of the greatest practical value. That the careful study of each case resulting from such a system is, moreover, without annoyance to the patient I can testify from my experience of the past thirteen years in Professor Osler's wards, in which I have seen the direct transition from one system to another. To the student this experience is invaluable, and it seems to me to be absolutely necessary, if the degree of doctor of medicine is supposed to represent a qualification for practice.

Such experience, however, is of limited value unless it be associated with frequent and careful ward visits from the instructor. And these visits make considerable demands on his time. Teaching, direction of the research work of the department, the study of the material afforded by the clinic, these should be the main duties of the professor of medicine—duties incompatible with other than a purely consulting practice. To make this possible our universities must recognize the fact that the professorship of medicine, as well as the professorship of anatomy, should be properly endowed. Only by the adoption of some such system as this can we hope to bring our instruction in the practice of medicine to the level of that which is given in Europe.

For proper ward teaching the clinic must be so organized that the professor shall have several regularly appointed assistants, who shall take part in the investigation and instruction going on in the department. This is desirable, not only for the instruction of the students, but for the education of teachers. If we are to approach the infinite number of problems in pathological physiology which come before us every day in the observation of disease in anything like the manner in which such problems in normal physiology are studied in the laboratory, we must have a regular staff of assistants. No laboratory of physiology, for instance, could accomplish scientific work if the entire staff consisted of the professor and a number of young internes appointed annually from the graduating class. It is only through the opportunities offered by such positions that younger men are enabled to acquire that experience which fits them for the task of teaching.

The problems involved in the study and teaching of clinical medicine differ in no essential from those connected with the study and teaching of physiology, and until we recognize this fact and meet it squarely our clinics will remain unproductive and our teaching inadequate.

The most serious impediment in the way of advance in our methods of clinical study and teaching is the wide-spread institution of rotating services in our hospitals. In no service where the head of the department changes every three or four months can really valuable investigation be accomplished. And the best instruction can not be given to students in wards presided over only by a visiting physician and young, annually appointed, assistants. A permanent service, even though it be small, and a fixed staff of assistants offer incalculably greater advantages for study and research and teaching.

It is, of course, evident that instruction of this sort in larger schools can not be given in one clinic or by one man. The day must come when every well equipped hospital shall be at the same time a laboratory for the study and teaching of clinical medicine, offering the clinical advantages required by the central university or by state regulation. Every physician or surgeon holding an appointment at a large hospital or out-patient department should be encouraged to teach.

The hospital will gain by the supply of the best trained assistants and by the education of the staff, for there is no training so good as that of teaching, and there are no such spurs to work and progress as the questions and suggestions of the enthusiastic student.

The student will gain, in a few months, experience which it might require years to accumulate after graduation, and he will acquire that experience, as I have said elsewhere, at a time when he is free from the prejudices and preconceived ideas which are sure to obscure the judgment of the man who has gained his medical experience second hand from books or lectures.

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[*] Med. News, N. Y., 1903, lxxxii. 49.

The general public will gain the simple protection which any civilized government owes its citizens.

In this very city there are opportunities such as exist in scarcely any other community of this country for the realization of our ideals in medical instruction—a city of over 300,000 inhabitants, a fine old hospital of nearly 900 beds, a single school connected with a university of honorable past and most promising future. Tulane University has been a leader in this branch of medical education, but it can do more. The university can still offer to the hospital and the hospital to the university that which might make New Orleans the model for the rest of the country.

Original Articles.

THE BOY'S VENEREAL PERIL.*

[The author believes that the objects of this paper will be furthered by substituting initials for his name and by omitting his address in reprints thereof.]

FERD. C. VALENTINE, M.D.
NEW YORK.

I. INTRODUCTORY.

Many important books have been written and many valuable papers contributed to medical journals on the dangers of venereal diseases. All show that venereal diseases are more perilous to the individual, the family and the state than are all other ailments combined.

Study and effort directed to their abatement lead to the inevitable conclusion that venereal diseases are due essentially to prostitution, clandestine and public. The knowledge that venereal diseases are due mainly to prostitution does not, however, reveal the means of curing the evil: 1, Because all efforts to reduce public prostitution have proven and are always likely to prove futile; 2, because clandestine prostitution is necessarily beyond all efforts to limit its still greater power for evil.

The principal cause for the physical and moral wrecks produced by prostitution lies in ignorance. The same ignorance misleads many of the victims of prostitution to regard lightly the ailments thereby acquired.

The need for public enlightenment being manifest, many earnest men, I among them, have advocated lectures to the people on these subjects. More mature thought has, however, brought the conclusion that such lectures would fall short of their purpose, principally because, to be effective, instruction must be given at the opportune moment. A state of receptivity dependent on a condition so individual as mental, physical and sexual puberty must necessarily, in any assemblage, form as varying a factor as there are people present.

Obviously the effective teaching of these matters can be done only in private. It would seem at first glance that this is the father's duty. But some, indeed many men are so far removed psychologically from those nearest them that they could never successfully undertake this delicate task. Such men must relegate the duty to the physician, the teacher or the clergyman.

Among teachers and clergymen many have vague, and often gravely erroneous ideas on these subjects. Indeed, a majority of them has not received even rudimentary education on the structure and functions of the genito-urinary organs. They consequently have no knowledge whatever of the diseases due mainly to misuse of the genesic function.

If, for the reasons given, the father, clergyman or teacher is disqualified from imparting the necessary warnings, it may be well to direct the youth to study the third, fourth and fifth divisions of this paper.

II. THE DANGERS OF VENEREAL DISEASES.

In occasional contributions to our medical journals one eminent man or another asserts that the exercise of the sexual act is unnecessary for the preservation of health. As far as I know this has *not* been refuted. One reason for this silence may be, and probably is, that such refutation would be more likely to be read than were the articles contested. They would, as all such things do, fall into the hands for which they are least intended and be perverted to serve as scientific endorsement for libertinage and profligacy.

Wiser and deeper students may, in the course of time, establish whether illicit relations between the sexes is ever a vital necessity. For the present it suffices to say that young men are everywhere beset by temptations and induced by the spirit of evil, by the jests of their companions and by the solicitations of mainly clandestine offenders to seek sexual gratification, the desire for which is thus awakened.

The present purpose would not be advanced by a discussion of the need of sexual gratification for the maintenance of health. Moreover, the subject seems too individual for generalization and therefore not capable of wide application.

So much, however, experience shows, that no matter what volumes may be written on the wisdom of male sexual purity, whatever the endeavors of moralists, there will be, as there always has been, a vast majority who disregard precepts which oppose their desires. In consequence there is, as there always has been and will be, an overpowering multitude of men who acquire venereal diseases to the detriment of themselves, their families and the state.

To[illegible]t extent this detriment goes is incalculable, as s[illegible]n the subject can not be reliable. It will su[illegible] to note that conservative authors estimate that one-eighth of all the patients in the hospitals of New York are inmates thereof because of venereal diseases or their consequences.[1]

Those in hospitals represent but a small fraction of the people attainted. The latest study of the question[2] made by a body of physicians appointed by the New York County Medical Society for the purpose, makes the appalling declaration that 200,000 people infected with venereal diseases are walking the streets of our city.

The working and consequently earning power of these people is materially reduced. If every infected person loses only $1 per day, then the loss of earnings from this cause alone amounts to *sixty million dollars* per year. This loss is directly or indirectly borne by all, even those who are so inexpressibly selfish as to have no feeling for the sufferings of others.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

[1] Specific mention of the works of such eminent writers as Morrow, Sturgis, Tarnowsky and others, is intentionally omitted here because they are well known to the medical profession. Laymen who may desire further information on these subjects, can easily obtain from their physicians the titles of the best works that treat of them.

[2] Morrow: Report of the Committee of Seven on the Prophylaxis of Venereal Diseases in New York City. Medical News, No. 25, 1901.

The heaviest part of the burden rests on physicians, who must give their services gratuitously to over 66 per cent. of their patients. But they do not complain of their unrecognized philanthropy, nor do they advertise it. They exercise it as the most important part of their priesthood.

Men who devote their lives to the relief of misfortunes which bring the deepest woes, are daily astounded at the consummate ignorance that prevails among all classes regarding what is, from the nature of things, a generally tabooed subject. It is not only the uncultured, uneducated man who is the victim of unbridled passions; his cultured, educated and intellectual brother is equally and just as frequently unfortunate. There is no excessive charity in here using the word "unfortunate," for he is truly unfortunate and it avails nothing to consider him otherwise; nor is there any excessive optimism in the conviction that if all men could be informed of the dangers of venereal diseases, fewer would contract them, or having contracted them would neglect them as they now do.

Honest endeavors are continually made, especially by physicians, to enlighten the public on this subject. But their excellent counsel must ordinarily be limited to persons who have already acquired the disease, and for whom the topic has at the time absorbing interest.

The ignorance that prevails on these subjects is far-reaching in its effects. The patient, uninformed of the dangers to his health and life, generally does not seek early and radical treatment for the infection. More frequently still, associating venereal diseases with the only mention of them that has come to his notice, namely, in the advertisements of quacks, he consults one of these harpies or their congeners, the patent-medicine dealers. Later on, and often too late, he learns that every community has conscientious practitioners who scientifically study these diseases. Only then does he discover that he has wasted time, injured his health and imperiled his life through his ignorance and the shamelessness of those who have taken advantage thereof.

As little as the patient knows of the dangers to himself of venereal diseases, so little is he aware of the menace to his family. He should know at least two facts, which in efforts laid before the profession were elsewhere discussed. These facts are:

1. That of all women who die of diseases of the reproductive organs, 80 per cent. are victims of gonorrhea, of which their husbands imagined themselves cured.

2. That of all children born with seeing eyes who became hopelessly blind within a few days after birth, 80 per cent. lost their sight because of infection by gonorrhea, of which the fathers imagined themselves cured. (This paragraph refers to the time before the Credé method of protecting children's eyes at birth was employed.)

The patient is, as a rule, as ignorant of these frequent results as he is of the danger which venereal diseases are to the community. The need, therefore, of instructing the people at large on these subjects is manifest. As said before, however, the knowledge usually is imparted after the damage is done.

Many physicians, I among them, have striven to aid in combating this most dangerous ignorance. Although the papers written were received in a most cordial and kindly fashion, they could not meet the fundamental defect which prevails, that of preliminary education in those whom physicians must instruct. This shortcoming was made painfully apparent by letters from practitioners in all parts of the country.

Manifestly, then, there is need for explanation to the young which will appeal to them at the most susceptible age, that of puberty. To meet these evident requirements I have, at various times, attempted to construct an essay that would serve the ends in view. But at almost every line I was confronted by the dread that, by the very writings, the youthful mind might be directed to temptations that might not otherwise come to it.

It was my fortune, at the second conference for the Prophylaxis of Venereal Diseases, held at Brussels early in September, 1902, to receive a copy of Professor Fournier's article addressed "To Our Sons When They Have Reached Their Eighteenth Year." This admirable paper, written temperately, with much wisdom and great tact, indubitably meets the requirements of the sons of intellectual people. The temptation at once presented itself to translate Professor Fournier's paper, but throughout it is permeated with the spirit which makes it so eminently acceptable to the French line of thought. It would not apply as well in our own country, where the Anglo-Saxon manner of thinking and living predominates. Appreciating the need of a similar effort it is now attempted in the hope that better pens will take up the matter for the benefit of the rising generation.

The proposition, as suggested before, involves the problem, at what period of the young man's life this information should be imparted to him. Those closest to him must be the judges of the opportune moment.

The remainder of this paper consists of:

1. The evidences of awakening genesic tendency.
2. Masturbation and the impulses or defects that lead thereto.
3. The evil influences that mislead youths into immorality.
4. Prostitution, public and clandestine, and the mental and physical destruction they bring.
5. Gonorrhea, chancroid, chancre, and their sequelæ.
6. Advertising quacks, nostrum venders and an exposé of the methods they employ to swindle those afflicted with real or imaginary genitourinary and other ailments.
7. The reasons why a youth with a real or fancied illness due to immorality should consult a physician whom he knows, or whom his father knows.
8. The reason why reputable practitioners do not advertise.

These matters, being addressed to boys, are necessarily presented in such elementary outline and puerile language that they have no place in a scientific publication. The author therefore requests their omission here, but for completeness will add them to the reprints of this article, which will be furnished to physicians on request to that effect.

31 West Sixty-first Street.

DISCUSSION.

DR. JAMES J. WALSH, New York—The great universities of Europe, especially those in Berlin, have deliberated on this question, and the students are taught what is meant by venereal diseases and what their significance is. This is certainly not a pleasing question for deliberation, but it is an exceedingly important one. At the University of Berlin a course on the significance of venereal disease, open to all the students, is supported out of the emperor's purse, and is very largely attended, thousands of young men attending such lectures. The time must come, and shortly, too, in America when the universities do something to protect the students and give them this much-needed knowledge. At the present time all the universities are necessarily situated in the large cities, and the young men from the country are invited to come to the city, where they meet with the dangers of city life. I think it is our duty to give these young men such knowledge as will protect them against the physical evils of venereal diseases. Faculties which do not make some provision for this are neglecting a serious duty. Any objections to such a course being instituted in our universities are founded on pusillanimous prudery.

DR. F. W. ROBBINS, Detroit—I think the paper is written in a strong style and will impress the readers. I think that mental impression is of more importance to the youth than the mere knowledge. It seems to me that the period of life at which the intelligent young are instructed in these matters is, in most respects, too late. There are two periods in the boy's life when he should be impressed with this knowledge: 1. The early period, which comes at the ninth or twelfth year. Children at this period can scarcely be expected to be much impressed with such a paper in which there is so much discussion. Then it is that the boy more particularly requires the attention of the father and not of the physician. 2. At a later period, when the boy goes to school, he should be given this knowledge. I believe it is an injustice to allow these boys to go without this precious knowledge. I think it is not so much the knowledge as the mental impression which keeps these boys moral.

DR. DELANCEY ROCHESTER, Buffalo—I am particularly interested in Dr. Valentine's paper because twelve or fifteen years ago I presented a paper on a similar subject before the American Academy of Medicine. I believe the proper time for giving such instruction to these boys is during the high-school period, and the best way of imparting this knowledge is by the proper teaching of physiology in the schools by physicians. The whole subject of physiology should be taught and not—as at present—only part, and that imperfectly. The truth should be taught; and that is that there are two great functions of the organism, namely, the preservation of the individual and the perpetuation of the race; that the functions of the various organs of the body are subsiduary to one or other of these great functions.

A thoroughly careful and competent teacher could show by the history of the complete separation of the sexes in plant and animal life that there has been developed the most beautiful in flowers and the noblest in animals. Time does not permit me to elaborate the scheme, but I thoroughly believe that physiology taught in this way would arouse in each one a noble respect for the human body in all its parts and a determination to do all in his power to develop a perfect human being and to keep it pure and holy. I believe that by careful selection of teachers physiology could thus be taught in the public schools.

DR. THEODORE POTTER, Indianapolis—My experience has led me to somewhat the same conclusions as Dr. Valentine has reached. There are two periods in the boy's life when such instruction can be given: 1. At the time of puberty, when the boy is at home under the influence and control of his parents and family physician; 2, when he goes to school or college. At this latter period he will look on such instruction as may be given him in a serious way. If I am allowed to differ with the last gentleman who spoke, I must say that I question whether the public school or the intermediate school will give the proper opportunity for giving such instruction, because the boy is more or less immature at that time and looks on such teaching as frivolous and makes a joke of it. Later he will listen and take it in a more serious way. When attempts have been made by public school teachers to instruct the boys in this country they take it as a sort of joke; but this is not so among the college students. It really is surprising what a great amount of ignorance is displayed by those young men who are entering or who have gone through college. I have had experiences in the west as well as the east in institutions, and I have seen the most lamentable examples of young men, not bad men at all, who have gotten into trouble largely through ignorance. This is the point: The young man goes free for the first time when he enters college and, since human nature is imperfect, when he reaches this time of freedom something goes wrong and it is largely through lack of proper instruction. I believe Dr. Valentine is right when he states that when the young men attend college, reaching the age of maturity, then is the time that serious instruction should be given.

It has been my habit, and this I think should be done by the physicians all over the country, to say to my patrons who have boys, that I am going to talk to a few boys at my house and if they wish they may send their sons. Invariably I have met with a willing response, and I know that my efforts have been crowned with success, so far as instructing them is concerned.

DR. M. M. SMITH, Austin, Texas—I desire to lay special stress on the influence exerted by the home circle in the prevention of venereal diseases in young men. During the earlier years of the boy's life he is constantly with the mother and if she is careful of his conduct and associates and watches him carefully and teaches him obedience and morality during these years, instead of spending much of her time at card parties or other amusements, when the boy runs loose about the streets during her absence, he will show the value of this watchfulness in his character. Equally important is the duty of the father, and especially is this true when the boy reaches the age of puberty. This is the time the father should be his companion and friend, and especially watch his conduct and companions and guide him safely over these few years when he is developing into complete manhood. A little denial of lodge meetings or the absence from clubs or other social functions will result beneficially to the boy's welfare in life. It is too often the case that the parents are earnestly at work to further some charitable and noble enterprise in that public-spirited manner; but at the same time they are neglecting their own children at a time when their influence will leave its effects all through their lives. The subject should engage the attention of the parent, the teacher and the physician; in fact, on the proper solution of the subject depends the future welfare of the nation.

DR. FRANK A. JONES, Memphis, Tenn.—I doubt very much the propriety of bringing this matter before the laity as advocated. By doing so there will be a tendency for the boy of young age, who is disposed to look further into such matters, to investigate further with disastrous results. We meet sexual neurasthenia which is purely an imaginative condition; many come to us with trivial affections and even talk of suicide, and this may be the result of publicity being given to such matters. I do not think this subject should be placed before the public. Try and enjoin on the young men this, that the way of the transgressor is hard. I think the young men can be reached better through the medical profession than through the public press or other means of publicity. I think it would be wise to distribute Dr. Valentine's article by the thousands to various physicians in the American Medical Association.

DR. E. L. STEPHENS, Des Moines—Before the boy reaches the age of puberty I think he should be taught the sacredness and naturalness of the sexual instinct, and this can be done in a quiet way. There has been published a book, "Almost Fourteen," by Mortimer Warren, which I think is most suitable to place in the hands of young men, and the only one that I have been able to find after nearly forty years' search.. That is, I believe, the only one that can be safely placed in the hands of young men as being scientific and pure. Since the American Medical Association has been reorganized we now have a means whereby we can legitimately place such information before the public; previously it could only be done by quacks. Now each councilor in each district has the privilege of using the public press for disseminating proper information. Why not take this opportunity for exercising this point? I would not think it proper, nor would I advocate placing posters in water closets, etc., but we can present through the public press the right ideas and the right information which would offset the wrong impressions given the laity by charlatans and quacks.

DR. WALTER SHROPSHIRE, Yoakum, Texas—I think that if anything is to be accomplished toward protecting the young of this country it should be done at a time when it would be effective. When the boy reaches college it then is too late. If we should wait until some definite period we should select that period when such instruction would be most efficient and that is concomitant with the development of the sexual function in the boy. When he first learns of this function he should be taught the dangers of its misuse. I really believe that physicians should teach physiology in the public schools and, at the same time, they should teach regarding the sexual function and the dangers which its abuse entail.

Dr. Ferd. C. Valentine, New York—Naturally it was impossible in the brief synopsis which I presented to cover the entire ground; that has been largely done by the gentlemen who so kindly discussed my effort.

With regard to Dr. Walsh's remarks, I may say that the universities in Germany, beginning in Berlin with Lassar, have given instructions to students regarding the dangers, etc., of venereal diseases. Lectures are delivered to students of all the departments of the university. The brilliant success of Lassar was so encouraging that it caused an increase in the number of such lectures, with exceedingly good results. But you may ask how many of those young men who came there to be educated and were instructed in venereal diseases had not unfortunately educated themselves. In Berlin the war is directed against the repetition of contracting such diseases, as well as instructing regarding their nature and results. I agree with Dr. Walsh, that some method should be introduced in this country to teach the young men the evils of venereal diseases. I wish to emphasize his remarks and say that university students who attend these lectures derive much benefit at the time when they certainly are qualified to receive such instruction.

What Dr. Robbins says regarding the time for receiving such instruction is undoubtedly correct, but he says it is not so much knowledge but impression which is of value, and that they should be taught at an impressionable age. But what is that age? That varies with the individual. There are some boys who are impressionable at the age of 12. I am now treating one not quite 14 years old, who has a gonorrheal prostatitis. This boy is the only son, in a good family, and has been correctly raised. With six others he was solicited by a girl of 14; all six contracted gonorrhea. Had he been instructed at the period when he was of the impressionable age his misfortune might have been averted.

FAT NECROSIS OF THE KIDNEY.*

JAMES R. GUTHRIE, A.M., M.D.
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DUBUQUE, IOWA.

When we consider the rather superficial location of the kidney, its importance and the various pathologic changes to which it is liable, it is strange that for so long a time it eluded careful examination and escaped the surgeon's knife. In the past five years, however, the surgeon has made determined, successful efforts to make good that deficit.

Fat necrosis in the tissues of the body is neither a new process nor a new discovery. It has long been recognized in the several tissues of the human body, notably in the abdomen, in the abdominal walls, in the subperitoneal fat, in omental structure and in the pancreas. For a long time it was supposed to be due to some form of pancreatic disease, but it is now well known to occur independently of any affection of that organ. The accepted physiologic view is that fat may be formed in both animal and vegetable bodies from albuminoid matters. Proteids break up in the body into nitrogenous and non-nitrogenous compounds. This is demonstrated in the human subject and by experiments on the lower animals. The non-nitrogenous compounds not being completely oxidized in the cells are formed into fat. The process actually occurs wherever fatty substitution takes place in the animal cell. Hoppe-Seyler takes the view that fat is not directly formed from albumin, but that glycogen is first formed and that fat is a resultant product. Volt's view, and the one generally accepted, is that fat is formed directly from proteid material. Graham Lusk,[1] after quoting various experiments along this same line, concludes, "It seems rational that in acute fatty metamorphosis of the cell that dextrose found may be quantitatively converted into fat."

The physiologic fact, I think, as well as the chemical changes underlying it, are reasonably well understood and generally accepted, but the etiologic factors, active and predisposing, are by no means clearly settled. Fat necrosis, as the term is employed in this paper, denotes a type of necrosis to which certain tissues are liable, separate and distinct from fatty degeneration. It presupposes the fact of fatty degeneration and, subsequently, a necrosis forming of the entire structure of fatty emulsion.

According to Stengel, there are a few microbes which form emulsifying ferments, which may cause this fatty emulsion. The term "liquefaction necrosis" probably better conveys the correct meaning. Ziegler says, "A liquefaction necrosis may occur in the tissues where the cell wall becomes dissolved in the fluid present in the part." "Fatty degeneration may so terminate," says this distinguished authority. Bacteria is said by some observers to be concerned in this change. The part played by these organisms is still under investigation. Dörsch says, "The cortex of the organ is most frequently involved, though the medullary portion is frequently affected in a minor degree." Hektoen considers this condition due usually to the escape of the fat-splitting ferment, resulting in the formation of fatty acids and lime salts. Gaylord states that fat in the kidneys occupies the space between the lobules in the connective tissue.

There are many causes assigned for the formation of a fat necrosis in the tissue, either with or without liquefaction:

1. Changes in the supply and composition of the blood.
2. Diminished oxygen.
3. Blood diseases.
4. Narrowing of the arteries supplying the part. (Narrowing of the blood vessels of the heart leads to fatty degeneration, according to Hektoen.) Fatty degeneration of the kidney in pregnancy is due to disturbed circulation, says Stengel.
5. Persistent venous congestion. Displacement of the kidney producing, as it certainly does, changed blood supply, diminished oxygen, torsion of the renal artery and, together with a constant venous congestion, is a sufficient cause for liquefaction necrosis of the organ.

In the literature which I have been able to examine the references to this subject have been sparse indeed. A case is reported by Dr. T. Charlewood Turner[2] of a girl 13 years old who died of pericarditis. The autopsy revealed a fatty kidney, and he described a necrosis with softening and, though it is not distinctly stated that the necrosis affected the fatty tissue, yet from the present light I think this a fair presumption, that the softening was due to a liquefaction necrosis in the fatty substance.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

[1] Report before the American Physiological Society, Boston, Tenth Annual Meeting.

[2] Transactions Pathological Society of London, 1886.

Dr. Ephraim Cutter,[3] New York, contends that many organs of the body are subject to fatty substitution, and that necrosis of this fat is often present.

E. W. Cushing[4] describes the case of a patient who passed urine, one-fifth of which was oil, several days before death, and that among other things the postmortem examination revealed a necrosis of fat about the kidney, producing oil which escaped with the urine.

Thomas Oliver[5] reports, from his private practice, two cases of oil in the urine. He asserts that there was present in these cases a fat formation and a tendency for molecules of fat to form into globules, which, by solution of the cell wall, made their escape into the pelvis of the kidney. There is evidence enough to establish the possibility of oil formation in the structure of the kidney itself. Newbaur, in his work on the urine, speaks of the rare appearance of this constituent in the excretion derived from the kidney from this fatty substance. Fat globules are held in solution by the albumin present. Roberts, in his work on urine and urinary disease, may also be quoted to the same purpose.

It is believed, therefore, that a liquefaction fat necrosis is possible in the substance of the kidney; that a dislocation of the kidney may form the active cause for this change, and that the case briefly described below falls under this category.

April 23, 1902, I was consulted by Miss M. D., aged 22, of Welsh parentage, with unexceptional family history and personal history, free from disease, except some slight illness in childhood. She gave a history of a tumor-like mass, discovered by her about one year before, in the left hypochondriac region, extending down to two inches above the umbilicus. The November previous she consulted her physician, who found the enlargement, which he described at that time as freely movable, and made a thorough examination of the patient, with a negative result, except that he found general loss of strength and great languor. Her symptoms remained practically unchanged, except increased weakness, which led her to seek further assistance. She entered the hospital on the afternoon of April 23, and the examination which I made the following day resulted negatively, except that there was an accelerated, weakened condition of the pulse, and a tumor located as above described. The tumor seemed to be nearly one-half larger than the normal kidney, and by pressure could be returned nearly to the normal kidney location.

April 25, a lumbar kidney incision was made in the usual manner, and the kidney brought up into the wound and the fibrous capsule grasped by a clamp. The capsule gave way and there was discharged from the kidney a yellowish semifluid substance to the amount of 12 to 14 oz., and resembling in color an emulsion of cod liver oil and iodoform, containing a peculiar flaky or shredded material. By digital examination I found that, practically, the whole kidney substance had been destroyed. I stitched the kidney into the wound, leaving free and unobstructed drainage. Some of this semifluid material drained from the kidney for several days. Some of the material saved in the test tubes I submitted to Dr. Geo. Mengis, Dubuque, Iowa, for chemical and microscopic examination, and he reported the material composed almost entirely of an emulsion containing oil, fatty cells, together with fibrous and connective tissue. A fatty substitution had taken place in the kidney, followed by liquefaction necrosis, which had, practically, destroyed its secreting structure.

It is believed that this girl primarily suffered from a floating kidney, which, by torsion of the renal artery, produced the pathologic changes described. The recovery following the operation was uneventful, with the exception that for three or four months she suffered from weakness and rapidity of the heart's action.

In a letter received not long since from her physician, Dr. C. W. McLaughlin, Washington, Iowa, I learn that she has completely recovered. The sound kidney seems to be doing well the work of elimination.

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[3] Paper before Mississippi Valley Medical Association, published in Medical Age, Detroit, Oct., 1895.

[4] Paper before Boston Society for Medical Observation, published in Boston Med. and Surg. Jour., May 17, 1881.

[5] British Med. Jour., Dec. 27, 1879.

SURGICAL TREATMENT OF NEPHRITIS.*

ALEXANDER HUGH FERGUSON, M.D.
CHICAGO.

"The Surgical Treatment of Nephritis or Bright's Disease" was the title of a paper published by me March 11, 1899, in The Journal of the American Medical Association. This is the first announcement that has ever appeared recommending a surgical treatment for Bright's disease. The date of this publication has been overlooked by Dr. G. M. Edebohls in all his articles. Dr. Edebohls' first paper, entitled "Chronic Nephritis Affecting a Movable Kidney as an Indication for Nephropexy," appeared in the *Medical News*, New York, April 22, 1899, one month and eleven days after my first article.

Feb. 10, 1899, a symposium on nephritis was the program of the Chicago Academy of Medicine, and the surgical treatment was assigned to me. At this meeting I related two cases of interstitial nephritis symptomatically cured by *decapsulation and multiple punctures*. I removed a portion of the kidney in each case, which was pathologically reported on by Drs. Klebs and Zeit, and they pronounced it interstitial nephritis. In these two instances no positive diagnosis was made before operating.

At that meeting I related several earlier cases, but inasmuch as I had not examined a section of kidney tissue microscopically in any of them, I thought it wise not to publish anything but the two cases in which that was done. Dr. R. B. Preble, while denouncing splitting of the capsule, etc., as dangerous and useless, terminated his remarks as follows:[1]

> While Dr. Ferguson's paper was interesting, still the bulk of the cases do not apply to nephritis at all (claiming that my diagnoses were in error), and the latter cases which were demonstrated to be nephritis have not recovered from their nephritis, but have been relieved of a purely subjective symptom.

Time has proven him to be wrong.

HISTORY.

In 1902 an article from the pen of Guiteras,[2] on the "Surgical Treatment of Bright's Disease," gave an excellent historic review of work leading up to this subject. He, too, overlooked my first publication, March 11, 1899. He gives the more recent developments, and has added three cases operated on by himself. It is my intention in this short paper to briefly give the evolution of the surgical treatment of nephritis, and add a few more cases of this disease treated surgically.

Reginald Harrison made a mistaken diagnosis in three kidney cases (1878, 1887 and 1893) of an abscess in one and stone in the other two. He cut down on them and found acute nephritis instead. It was fortunate for his patients that he and his associates were in error, for the operation cured them, and let me ask if in these cases a diagnosis of acute nephritis had then been made. would the knife have been recommended? I think not!

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

[1] The Journal A. M. A., March 11, 1899.

[2] New York Medical Journal, May 17, 1902.

Newman (1896) observed in two cases the beneficial influences fixation of the kidney had on albuminuria. In 1899 Tiffany successfully incised the capsule and parenchyma of a kidney affected with chronic nephritis, complicated with nephralgia. In 1886, Péan removed a kidney for nephralgia and chronic nephritis.

In October, 1899, Pousson collected 25 cases and added 2 of his own: of hematuric nephritis, 10 cases: nephritis with nephralgia, 2 cases; subacute infectious nephritis, 4 cases; acute infectious nephritis, 9 cases. The kidney was removed in 11 of these, opened in 13, and 1 exploration, with 21 reported cured. These operations mentioned by Pousson included those of Harrison, Weir and Israel, and were undertaken, not with the object of curing Bright's disease, acute or chronic, but for some suspected surgical condition, such as abscess, tumor, stone, etc.

In 1899 Israel reported 14 cases of hematuria and nephralgia treated by nephrotomy. In 12 of these there was evidence of chronic nephritis. It must be remembered that Israel did not aim at a surgical treatment for Bright's disease, and recommended an operation only when there was hematuria or nephralgia.

In November, 1890, Naunyn, in writing of nephrotomy for bleeding in nephritis, stated that "nephrotomy may some day play a far greater rôle in the treatment of Bright's disease."

Edebohls, April 22, 1899; 1901, and 1903, has given to the medical world his conceptions of the surgical treatment of nephritis, his operations and results. I wish here to commend that work. He observed the beneficial effects of nephropexy eleven years ago. "My first case was operated on as long ago as Nov. 29, 1892; my fifth April 1, 1897."[3] In speaking of his sixth case, in the same article, he says: "This operation, performed on Jan. 10, 1898, constitutes the first operation ever undertaken on the kidney with the deliberate purpose of curing chronic Bright's disease and, in so far, marks a period in the history of the affection." This case was published in his first paper (April 22, 1899), after my first publication.

Dr. Edebohls' work has taken root, and we are here and there hearing of good results from other surgeons. Physicians in the first rank recognize that there is a surgical treatment for nephritis. To Dr. Edebohls is due the credit of individually working out this surgical treatment and operating on more cases of Bright's disease than any other surgeon. While I am constrained to claim priority (first in publication), I can not but feel proud of the distinction and record the Doctor has made for himself in trying to solve the limitations of kidney decapsulation in nephritis. Dr. Edebohls'[4] published experience amounts to no less than 51 cases treated by operation. It will be seen in the description of my experience, our work has been developing contemporaneously.

I shall now very briefly refer to the development of kidney surgery before giving my personal work on nephritis. It is only thirty-five years since the kidneys have been operated on at all. Like many of the other internal organs of the body, diseases affecting them were treated by internal medication. We can appreciate how Peaslee (1868) felt when he removed a kidney by mistake, taking it for a solid ovarian tumor. Although the patient died on the third day of peritonitis, two lessons have been learned by his mistake. First, the feasibility of nephrectomy, and second, that urine was secreted abundantly by the other kidney. Spencer Wells' case also died, but not from suppression of urine.

The following year (1869) Simon of Heidelberg purposely and successfully attacked the kidney for a ureteral fistula in a woman. I have no doubt that his experiments on dogs in this line better fitted him to successfully perform the operation.

Within seven years after the first removal of a kidney by Peaslee, no less than 233 nephrectomies were collected by Gross (1885). It would take some considerable time to reckon the number of nephrectomies up to date. The operation was extended beyond its reasonable and legitimate limits. Chief among the indications for the removal of a kidney were stone, pyonephrosis, hydronephrosis, tuberculosis, floating kidney, nephralgia, hematuria, and tumors.

Nephrotomy for stone (nephrolithotomy) was first performed by Morris of London only twenty-three years ago (February, 1880). Then nephrotomy gradually supplanted nephrectomy in many cases.

Nephropexy, by Hahn (1881), was the next important advance in renal surgery.

PERSONAL EXPERIENCE.

In 1899 I explored a kidney suspected of containing a stone, in a young man, 24 years of age, suffering with renal colic. There was blood in the urine, and the kidney was very tender on pressure. The exploration consisted in exposing the organ and passing a darning needle, blunt end foremost, through it in many directions. No stone was found, but temporary relief from pain and hemorrhage was given. Within a year afterward he returned to see me. Bright's disease became more and more marked, and four years afterward he died of parenchymatous nephritis.

In my early fixation of floating kidneys, I used a stout chord of chromic catgut and passed it through them four or five times and, while using this stout cord, no complaints came from our patients after the operation. But just as soon as we began to use fine catgut or silk and grasp only the capsule two cases returned, complaining of pain, as before, although the kidneys remained fixed. In 1900 I explored one of these for stone with the knife; found nothing; had free hemorrhage, which was checked with iodoform gauze. This made a symptomatic cure; the nephralgia completely subsided, and she is now well. After this I did some fixations by cutting through the capsule, rolling it a little to each side, and passing sutures through it and through kidney tissue as well, with satisfactory results.

My first decapsulation, deliberately undertaken, was for "Nephritis and Floating Kidney."

NEPHRITIS AND FLOATING KIDNEY.

CASE 1.—*History.*—June 17, 1896, Edna L., aged 25, entered the Post-Graduate Hospital complaining of a painful, tender, floating and enlarged right kidney. Urine scant, ℥xx in twenty-four hours; contained 30 per cent. albumin.

Operation.—Nephrorrhaphy; capsule stripped off. Urine increased in quantity, and albumin decreased. Nephritis was diagnosed as a complication. Case lost sight of (hospital record).

DOUBLE DECAPSULATION FOR NEPHRITIS AND FLOATING KIDNEYS.

CASE 2.—*History.*—Sept. 9, 1897, Mrs. B. G., aged 30, entered the Post-Graduate Hospital complaining of pain in the region of both kidneys. She had been suffering for twelve years, particularly from her right side. She was operated on three years previously for ovarian abscess, and one year previously (in

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[3] New York Medical Record, Dec. 21, 1901.

[4] Medical Record, March 28, 1903.

1896) for right floating kidney. Had one child twelve years of age. Her father died at 30 years of consumption. Her urine was very abundant, pale, and contained a trace of albumin. She was considered hysterical. Interstitial nephritis diagnosed. Both kidneys were floating freely.

Operation.—Capsule stripped from both kidneys, and sutured to lumbar fascia. She made a good recovery, and marvelously improved. Within six months she was able to do all her housework.

No cure was expected in this case, decapsulation being performed with the object simply of relieving her pain and tenderness. She was, two years later, symptomatically cured of her Bright's disease. It then occurred to me that all cases of tender and floating kidneys were cases of interstitial nephritis, and from this date (September, 1897) I expressed my convictions at my clinics.

MICROSCOPIC EXAMINATION OF KIDNEY TISSUE FOR THE FIRST TIME. LEFT FLOATING KIDNEY; INTERSTITIAL NEPHRITIS (BRIGHT'S). DECAPSULATION AND PUNCTURE.[5]

CASE 3.—*History.*—Mrs. M., 37 years of age and weighing 250 pounds, entered the Post-Graduate Hospital complaining of just two symptoms; (*a*) Dizziness. and (*b*) pain in the region of the left kidney. Taking morphin for the pain. Ill for three years. Began to have these symptoms after childbirth. Urine scanty, ℥xxiv in twenty-four hours. Normal, except a few hyaline casts.

Operation.—Jan. 4, 1899, I decapsulated the kidney, made multiple punctures in it, fastened it up, and removed a portion for examination. The immediate relief was astonishing to us all. Even the next day she declared that she was free from her old pain.

Pathology.—Microscopic examination of kidney tissue revealed interstitial nephritis.

In 1900 she returned, complaining of pain in her pelvis, and through the vagina I removed a left ovarian cyst. At this time her urine was normal in quantity and quality, but occasionally, such as after a hard day's work, she had an aching feeling in her left side, for which electricity was used. I have heard from her repeatedly during the past year, and she is symptomatically cured, it now being over four years since the operation.

INTERSTITIAL NEPHRITIS (BRIGHT'S); RIGHT FLOATING KIDNEY. DECAPSULATION. NEPHROTOMY (DRAINAGE); NEPHRORRHAPHY.[6]

CASE 4.—*History.*—Mrs. W., aged 26; chronic pain over right kidney, which was freely movable. Was taking from two to eight grains of morphin per day for the pain. (See full report.[6]) Had two confinements, one miscarriage, pulmonary hemorrhage, trachelorrhaphy, chills and fever (supposed to be malaria), cholecystotomy.

Operation.—Finally I operated on her right, tender, floating kidney. Owing to the septic condition of her urine, I thought the kidney was septic also, but it was not.

Pathology.—Microscopic examination of kidney tissue revealed the unmistakable changes of interstitial nephritis.

The immediate result was admirable. The albumin and casts cleared away before she left the hospital. After the first three days after the operation, she did without morphin, even though a habitué. Two years later she was well, and a later report brings the same good news.

INTERSTITIAL NEPHRITIS; NEPHROTOMY AND DRAINAGE OF LEFT KIDNEY.

CASE 5.—*History.*—Mrs. H.; aged 32. From Livery City, Iowa. Complains of pain and tenderness in the region of left kidney, which began two years previously, and then lasted severely for twelve hours, and had bloody urine. During 1897 and 1898 she had several attacks of pain and tenderness, referred to her left kidney, sometimes passing blood in urine, and often accompanied with chills and fever. During the last six months the attacks were more frequent, but no blood was passed with the urine. Mild chills and feverish sensations accompanied nearly every attack. On going over the case thoroughly, a diagnosis of recurrent interstitial nephritis was made.

Operation.—Nephrotomy was performed March 16, 1899, and kidney drained for twelve days. Patient left the hospital after three or four weeks, with marked general improvement, and entirely relieved of her pain and tenderness over the kidney.

Pathology.—The microscope shows interstitial nephritis.

INTERSTITIAL NEPHRITIS (LEFT). DECAPSULATION AND MULTIPLE PUNCTURES. GAUZE AND TUBE DRAINAGE TO KIDNEY.

CASE 6.—*History.*—Mrs. C., aged 43; dressmaker. In August, 1898, frequent urination; pain in back and over left kidney. Urine contained blood, albumin, casts; was highly colored and scanty, as reported by her attending physician at that time. Ever since this attack, kidney has been tender, but the urine has become abundant, three or four times the normal quantity, of low specific gravity (1,005), and always contained albumin and usually casts. Menstruation began at 14 and has been irregular. Edema of feet and hands; eyelids swollen and eyesight poor. Had pneumonia three times; inflammation of the bowels twelve years ago (probably appendicitis); abscess (1893) in pelvis opened into vagina; gonorrhea from her husband fourteen years ago (1885). Her mother died of ovarian tumor and interstitial nephritis. The region of the left kidney was tender.

Urine segregated, and that from the left side showed the following changes: "The specific gravity of both specimens is so low that I thought a mistake had been made, and we got water for examination. Doubting whether this was urine at all I tested for urea, and found 0.2 per cent. in both urines (should be 2 to 3 per cent.). There are some chlorids and phosphates, but the centrifuge shows no sediment of any kind, except a few squamous epithelial cells and oil globules in both specimens. No albumin; no sugar in either specimen. Reaction: Neutral in both specimens. No bacteria found in either urine. No casts." (Zeit.)

Pathology.—Report of kidney tissue: Interstitial nephritis.

Operation.—June 28, 1899. Left hospital in twenty-three days, improved in all her symptoms. In three months, urine much improved. Symptoms of nephritis almost absent. At the end of six months she resumed dressmaking. Her gain in general was slow, but gradual. During 1900 she had to cease working for a week out of every six or eight. In November, 1902, she was confined to bed for two weeks, and house for three weeks longer, with influenza. Both kidneys were sore and tender, but fortunately no active inflammation of them manifested itself. It was fully four months before she regained her usual health. Now she replied: "I am well; that is, much better than before the operation. I am working all the time, but have to be careful But I enjoy life. It makes me feel happy that for six months there has not been even a trace of albumin in my urine."

NEPHRITIS. DECAPSULATION.

CASE 7.—*History.*—Mrs. D., Redland, Iowa. Post-Graduate Hospital. Aged 34. Complains of: 1. Constant pain in the region of right kidney, with some pain in the left, off and on. 2. Inability to work for the last two years. 3. Urine irregular in quantity. 4. Shooting pains into back and thigh. Pain often severe all night, and during the day it is increased on motion. 5. Is weak, dizzy, constipated, and is troubled with palpitation of the heart.

Had a child two years ago, and has not been well since then. When 15 years of age, was struck in the right inguinal region with a baseball, following which she had colicky pains in that region for some time. Family history negative. Urine too abundant, ℥cxvi in twenty-four hours, of low specific gravity, 1,005; a trace of albumin; no sugar; casts, granular, hyaline; and contained indican. A diagnosis of interstitial nephritis was made.

Operation.—Decapsulation of right kidney. At the end of the third week urine in quantity only ℥xlv in twenty-four hours, and much freer from casts. (Portion of kidney removed was lost in the operating room.)

The patient left the hospital on the twenty-third day, free from her painful symptoms. Recent report not given. A year after the operation she was symptomatically relieved, and felt that she was cured.

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[5] The Journal A. M. A., March 11, 1899.

[6] The Journal A. M. A., March 11, 1899.

MOVABLE KIDNEY AND NEPHRITIS. DECAPSULATION; MULTIPLE PUNCTURES.

Case 8.—*History.*—Mrs. J. E. B.; aged 45; married. Admitted May 7, 1901; discharged July 2, 1901. Housewife; Swedish. Diagnosis: Movable kidney and nephritis. Parents both died from some acute lung trouble at an advanced age. Has seven brothers and sisters living and well. Patient has always been well. Married at 39; no children; never pregnant.

Present Illness: About five years ago she noticed pain in the right side of the abdomen, above the crest of the ilium and in back. About one year later she discovered a lump in the right side. It was easily movable in any direction, the limit being the center of the abdomen, costal cartilages, and below to McBurney's point. Has no severe pains at this time. Has worn elastic bandage for some time. Was able, but with difficulty, to attend to her household duties. For the last six months a dull, aching pain in the region of kidney has been constant. Menses now regular and normal. Bowels constipated. Lost some weight.

Operation.—Placed patient in saddle, which brought the kidney well up to parietes. Incision four inches long. Stripped kidney of its capsule. Made multiple punctures and anchored as usual. Drainage of gauze in wound.

Urine examination: Before operation, specific gravity 1018; acid reaction; slight albumin; hyaline and epithelial casts; no sugar. Temperature before operation, 98 to normal; pulse before operation, 80. Temperature after operation, maximum, 101; pulse after operation, maximum, 110.

Result: Dr. E. M. Brown saw the patient December, 1902. She was then entirely well.

PARENCHYMATOUS NEPHRITIS AND STONE. DECAPSULATION AND NEPHROTOMY.

Case 9.—*History.*—Mr. F. R., aged 38, of Luther, Ind., entered the Post-Graduate Hospital June 26, 1901. Complained of (*a*) pain in left side, running down to the testicle; (*b*) attacks of sharp pains, laying him up; (*c*) urine scanty and high colored. He passed gravel a year ago, after an attack of renal colic; then got some relief. The last few months the attacks have been more frequent, and recently the pain in the region of the kidney has become constant. The urine contained pus, blood, casts, bacteria, albumin, increase of chlorids and some bile.

Operation.—Decapsulation was made, because the capsule was firmly adherent. Nephrotomy was then performed, and several small calculi removed. Removed a section of the kidney and drained the kidney with a tube. This tube was left *in situ* until the discharge was free from pus and germs. He made a good recovery, left the hospital July 19, 1901, free from pain and greatly improved in his general health.

Pathology.—The report of tissue by Zeit and Klebs was that of parenchymatous nephritis, with cloudy swelling, regenerated epithelium, with granular and epithelial casts in tubes.

Result: Both immediate and remote, excellent.

RIGHT FLOATING KIDNEY; SUBACUTE NEPHRITIS. DECAPSULATION AND NEPHRORRHAPHY.

Case 10.—*History.*—Miss H., single, aged 32; musician; American. Admitted April 16, 1902. P. and S. clinic. Discharged May 18, 1902. Condition improved. Examined by Dr. E. M. Brown, March, 1903. Well.

Family history: Father and mother living and well. Four sisters and one brother living and well. One sister died during confinement.

Personal history: Diseases of childhood. Always well until ten years ago; began to get pale and weak. Exhausted on the least exertion, also very nervous. Bowels constipated. Appetite fair. Uncomfortable after eating. Began menstruating at the age of 13 years. Always regular, but painful. Eight years ago had dilatation and curettement for painful menstruation.

Present trouble: About eight years ago the patient had a fall from horse, since which time she has noticed a lump in right side of abdomen, which is very movable. Also complains of pain in right groin and appendiceal region. Tenderness of gall bladder also.

Urine examination; On admission, color amber. Specific gravity 1012: Reaction acid. Albumin none. Sugar none. Epithelial and granular casts. Urates and mucus.

Operation.—Usual kidney incision; kidney brought up and stripped; anchored to fascia. One strip of gauze for drainage. Appendix found suspicious and removed.

Pathology.—Microscopic examination showed slight change in interstitial tissue and parenchyma.

Temperature before operation, normal to 99. Pulse before operation, 76 to 90. Temperature after operation, maximum, 101.06. Pulse after operation, maximum, 112. Recovery uneventful.

DISPLACED AND FIXED KIDNEY. DECAPSULATION AND NEPHRORRHAPHY.

Case 11.—*History.*—Mrs. B., of Ashkum, Ill, aged 33. Referred by Dr. Ernest. Entered Chicago Hospital complaining of (1) pain in abdomen, especially on the right side; extreme tenderness on pressure; (2) intense pain, as if on fire, which patient insisted was the case; (3) great weakness, loss of weight and strength; (4) mental and constitutional condition much deranged.

Very unsatisfactory history, except that symptoms began after an attack of measles, followed by typhoid in February last, since which time patient has been gradually growing worse. In bed and unable to rise for over three months.

Physical examination revealed a firm, movable tumor, of the shape of a kidney, on a level with the umbilicus on the right side. This could not be returned to the kidney fossa. Urine: Specific gravity 1014; urea, 2.2 per cent.; albumin, peptone, indican, pus, epithelia, cylindroids and phosphates all present. Feces: No pus or blood, very fetid. Blood: Hemoglobin, 45 per cent.; red corpuscles, 4,500,000; leucocytes, 11,000; no Widal reaction.

Operation.—April 22, 1902. Exploratory incision down on tumor, which proved to be the kidney. All the abdominal organs examined and found normal. Incision closed. Lumbar incision made and kidney drawn up into it. Kidney congested and capsule thick and firm. Capsule stripped off and section of it and kidney removed for examination. Kidney sutured in place and drained with gauze and incision partly closed. Patient transfused, 1,000 c.c. of normal salt solution on table.

After-treatment: Patient given normal salt, one pint per rectum, every four hours for several days, and liquids *ad lib.*, by mouth. Pulse 120 and irregular. Temperature 102.8. During first four days patient had involuntary bowel movements, after which she began to retain normal salt and rectal feeding. Wound received daily attention and was kept clean.

On the twelfth day temperature was normal and pulse stronger and regular. Patient was able to be up on the twenty-seventh day, and on the thirty-eighth day following operation was able to be taken home.

Pathology.—Specimen normal, except for a few inflammatory cells. Present condition, patient in good health and well. Remarks: I fail to see what my operation had to do with her recovery. A. H. F.

RIGHT FLOATING KIDNEY. DECAPSULATION AND NEPHRORRHAPHY. GALLSTONES. CHOLECYSTOTOMY.

Case 12.—*History.*—C. Hosp. Dr. McKibbon, referred. Miss F., of Kalamazoo, Mich., aged 24; stenographer. Complains of (1) pain in right lumbar region, aggravated by exertion; (2) some swelling of ankles and of eyes; (3) headache and nervousness; (4) loss of appetite, constipation.

Illness began two years ago with pain in right side, which extends up to shoulder and down right leg. In February last it became worse and patient is now in almost constant pain. Urine: Specific gravity, 1024; no albumin nor casts. Epithelium (squamous).

Operation.—May 26, 1902. The kidney was found movable and prolapsed, and the gall bladder was palpable. Kidney decapsulated and punctured and sutured to lumbar wall. Gall bladder drained after removal of stones from it and the cystic duct.

Kidney was drained for two weeks. Patient had temperature of 100 till the eighth day, when it rose to 104. This was accompanied by great nausea and vomiting. Wound was dressed. Stomach washed out and patient given hypodermoclysis, a pint and a half of normal salt and a pint per rectum every four hours. Temperature dropped to normal in two days, and patient made a good recovery, leaving hospital on thirty-second day with small sinus, which soon closed. Now satisfactorily relieved.

PARENCHYMATOUS NEPHRITIS. DECAPSULATION OF BOTH KIDNEYS.

Case 13.—*History.*—Mr. B., aged 37. Referred by Dr. Wm. E. Quine. Complains of (1) pain in both kidneys, greatest in right; (2) highly albuminous urine; (3) general anasarca and ascites, with pitting over tibia on pressure.

When attending college about seventeen years ago patient contracted syphilis, for which he was treated three years and declared cured. Three years ago came to Chicago, suffering from anasarca, ascites and albuminuria. His life was despaired of, but by mercurial inunctions all symptoms except albuminuria cleared up. Patient was sent to warm climate, where he improved rapidly, stopped the treatment, grew worse, and under doctor's instructions began treatment again. Improvement now was slow and unsatisfactory. Recently patient has not been so well and was referred for decapsulation.

Right kidney is palpable and tender. Left kidney not palpable, but tender on pressing over it.

Urine: Twenty-four hours, ℥xxxii. Albuminous (50 per cent.). Granular casts in abundance. Pavement epithelia. Blood and bacteria present.

Operation.—Aug. 19, 1902. Right kidney exposed; the capsule, which was firm and adherent, was stripped off and the kidney punctured. Gauze drainage inserted down to kidney.

Patient made good recovery. Urine began to increase from the beginning, being ℥xli on the second day. The albumin likewise decreased, until on leaving on the eighteenth day there was only about one-half of 1 per cent. There was a slight fistula, which was rapidly closing.

Second Operation.—Patient returned Sept. 30 for operation on left kidney. Urine: Twenty-four hours, ℥xxxi. Albumin, 2¾ per cent. Casts: hyaline and granular. Left kidney drawn into wound and decapsulated. Drained down to kidney with plain gauze.

Patient made good recovery, leaving hospital on seventeenth day, with incision closed. Urine improved in quantity almost from the first day, the following being the daily quantities in ounces: 31, 31, 21, 32, 49, 53, 38, 58, 52, 66, 62, 82, 94, 65, 74. The albumin decreased to 0.15 per cent.

April 26, 1903. Mr. B. now reports that his general health is good and sends the following report of his urine: Twenty-four hours, ℥lxxxv; color, light amber; reaction, acid; specific gravity, 1015; albumin, 0.05 per cent. (by centrifuge); leucocytes, a few red cells, small, as if from the kidney. Renal cells, some fatty and a few fine and medium casts.

Pathology.—Microscope shows parenchymatous nephritis with hyaline degeneration.

FLOATING KIDNEY. DECAPSULATION AND FIXATION.

Case 14.—*History.*—Miss B., Newport, Wis., aged 24, nurse. Complains of (1) severe pain in gall bladder, but no colic; (2) jaundice, which is sometimes marked; (3) pain in back, which radiates down the right iliac fossa and legs: (4) drowsiness; (5) puffiness of eyes and swelling of wrists and hands; (6) temperature, 99 to 101; (7) loss of weight; lassitude. Urine normal. Has a soft, compressible tumor continuous with the liver, and another movable and firm, which can be replaced to kidney fossa. Patient had a severe attack of pain radiating down the right leg in September, 1900, and a second in March, 1901.

In August, 1902, pains returned in right side, and shortly after this she noticed jaundice for the first time. A second attack compelled her to stop work, and after a short time she returned for operation.

Operation.—Oct. 4, 1902. The gall bladder was drained. The kidney was decapsulated and punctured freely several times and drained; then sutured in place. Kidney drained for two weeks and closed. Patient made a good recovery.

Pathology.—Microscopic examination reveals, practically, a normal kidney; the slight cloudiness and congestion being due to the chloroform and manipulations.

Present condition: Free from symptoms. Urine normal. Has some pelvic pain at and following menstruation.

BRIGHT'S DISEASE AND PELVIC DISEASE. DECAPSULATION OF ONE KIDNEY AND LAPAROTOMY.

Case 15.—*History.*—Mrs. J. C. W., Chicago, aged 41, housewife. Complains of (1) backache; (2) pain in left side in lumbar region, extending up into shoulder and down into leg; (3) burning pain in feet, with swelling; (4) pain in pelvis; (5) dysmenorrhea; (6) headache, nervousness, sleeplessness; (7) frequent micturition; (8) nausea and at times vomiting; (9) constipation; (10) belching of gas after meals, but has good appetite.

Symptoms began eight years ago with nervous prostration. Following recovery she had a pelvic abscess, which was drained. Had excellent health until about two years ago, when she was treated for uterine troubles. Gives no good history as to when her kidney trouble began, but bladder has given her trouble for four or five years. Her kidney is easily palpable in abdomen, and replaceable to kidney fossa. She has some uterine displacement and strong pelvic adhesions, involving the ovaries and tubes.

Urine: Quantity in twenty-four hours, ℥xxx; specific gravity, 1030. Strongly acid. Hyaline and granular casts. Epithelium, small, round, spindle and pavement. Red blood cells and leucocytes. Bacteria. Cylindroids. Uric acid. Calcium, oxalate and urates in heavy deposit.

Operation.—Dec. 4, 1902. Curettage. Freeing of pelvic adhesions. Removal of both tubes and part of each ovary. Kidney decapsulated, punctured, fixed and drained.

Patient's temperature for a week was from 101 to 102, and during the second week she was wandering mentally, but later became rational and made a good recovery, leaving the hospital on the twenty-ninth day. Kidney tissue changes are both interstitial and parenchymatous.

Present condition: Relief of all symptoms (except the bladder). Gaining rapidly in strength and weight.

RIGHT FLOATING KIDNEY. NEPHRALGIA. DECAPSULATION; NEPHRORRHAPHY; APPENDECTOMY. KIDNEY TISSUE NORMAL.

Case 16.—*History.*—Miss H., Bradford, Ill., aged 24. (Dr. Hawkins.) 1. Burning pain in right kidney, with exacerbations. Pain radiating down in region of appendix, which region was also troubling her. 2. Pain over whole right side of abdomen and down the right thigh. 3. Inability to work. 4. Loss of strength and confined to the house. 5. Attacks of pain in lumbar region, which would disable her for a week at a time, with frequent and painful urination.

Patient has been complaining about three years with symptoms referable to this kidney, and the pain in the region of the appendix was grafted on it in the last two months. Right kidney floating, enlarged and tender. Kidney could be pushed down into the iliac region. There was also tenderness over the appendix.

Urine: ℥xl, pale and clear. Specific gravity, 1007; neutral. Urea, .2 per cent. No albumin and no casts.

Operation.—Feb. 25, 1903. (1) Curettement and packing of uterus. (2) Appendix removed through kidney incision. (3) Kidney drawn up; decapsulated; capsule sutured to wall and incision closed.

Patient did well for three days following operation, when she had a slight rise in temperature to 99.6, and in pulse to 100, with pain in region of right ovary and tube, which spread over the whole abdomen. There was nausea and slight vomiting. Blood examination: 57,800 leucocytes, mostly polymorphonuclear form.

On the fifth day incision opened and gauze drainage inserted. There was no exudate, and there were no signs of infection.

Patient continued with signs of peritonitis, and died on March 9, just twelve days after operation.

Autopsy.—Peritoneal cavity had considerable fibrinous exudate. Kidney and wound normal. Cultures sterile. Appendix stump normal. Right tube slightly inflamed. Left tube and its region congested and inflamed. Cultures showed streptococcus. Descending colon as high as splenic flexure, and the sigmoid congested and inflamed, with fibrinous exudate. Cultures showed streptococcus infection. Death caused by streptococcus infection, probably an old infection of the left tube lighted up by the curettement, or by an infection following the curettement, which is doubtful.

Case 17.—*History.*—Mrs. H., Chicago, aged 18. (Dr. Peacock.) In Chicago Hospital. Dr. Ferguson, consultant in operating room. Patient complains of (1) pain in the back, radiating down the right side and right thigh; (2) no urinary control; up several times at night and during the day; (3) pain in right iliac fossa.

Previous history: Ten years ago patient had ovaries removed. The commencement of pain is very indefinite, but it became quite severe during the last year.

The kidney is freely movable and very tender. Urine: Specific gravity, 1020; acid; urea, 1.5; hyaline and granular casts; small round epithelium. Considerable blood.

Operation.—March 20, 1903. Appendectomy by Dr Peacock. Kidney decapsulated and punctured. Sutured in position. Gauze drainage inserted down to kidney. Incision closed. Patient made good recovery, leaving the hospital on the nineteenth day.

Present condition: Patient up and around the house. Relieved of all symptoms. Does not have to get up during the night, and urinates about every four hours during the day.

OBSERVATIONS.

For a synopsis of the histories of the foregoing cases I am indebted to my first assistant, Dr. Hugh Neil MacKechnie, and my associate, Dr. E. M. Brown. It will be observed that my personal experience dates back to 1889. In 1896 a nephritis in a floating kidney was deliberately treated by decapsulation, but not until Jan. 4, 1899, did I begin to remove sections of the diseased kidneys under treatment, and study them under the microscope. While the reports given above are incomplete, from lack of space, still it will be seen that our treatment was justified by the results. In the vast majority of my cases the kidneys were movable and also chronically inflamed. In only two cases was decapsulation carried out for parenchymatous nephritis. The results so far have been excellent and astonishingly prompt. The symptoms of the cases, regarding urinary changes, digestive disturbance, nervous phenomena, skin signs, circulatory and respiratory changes were recognized as not of the severest types of nephritis.

I did not operate on cases with urine extremely scant, very marked hypertrophy of the left ventricle of the heart, edema of the glottis and lungs, Cheyne-Stokes breathing, marked general anasarca, etc., etc. The urinary changes can not be absolutely depended on to indicate the tissue changes taking place in the kidneys until at least a late stage has arrived. It was noticed that a tender kidney is often relieved after its fellow has been decapsulated.

PATHOLOGY.

The pathology, macroscopically observed and handled on the operating table, and a study of the microscopic condition of the organ in a living patient are of superlative interest and importance. An enlarged kidney may have few or no histologic changes, while one normal in size is often surprisingly diseased. A contracted kidney is usually very much destroyed. The intimate relationship between the capsule and cortex of the kidney by adhesions does not give us an accurate idea of the extent of the inflammation. Neither does the appearance of the fatty capsule. The only scientific procedure to pursue to obtain anything like an accurate knowledge of the *status presens* of a kidney under operation is to remove a V-shaped piece of the cortical and pyramidal tissues and study it microscopically.

MICROSCOPIC OBSERVATIONS.

In ten of the seventeen cases a portion of kidney was examined and studied. There were no pronounced changes in three. The pain and tenderness in these three cases of floating kidney must have been caused by something else than inflammation. In five instances the interstitial form of the disease was demonstrated by the microscope, which in these verified the clinical or provisional diagnosis. The microphotographs prepared by Professor Zeit reveal a picture of chronic interstitial nephritis. The proliferation and hyperplasia of connective tissue and areas entirely connective tissue, with obliterated or waxy glomeruli. One also sees islands of partially changed kidney tissue, with atrophic tubules, and tubules with desquamated epithelium; flattened epithelial lining in tubules of diminished caliber and some swelling in the lining of the epithelial cells. The hyaline casts in the tubules are worthy of notice, as are also the thickened capsules of glomeruli and the concentric layers of connective tissue with many nuclei, etc.

OPERATION.

(*A*) *Superficial Oblique Incision.*—Make the skin incision a finger's breadth below the twelfth rib and parallel to it. Cut down to muscular tissue; then dissect the skin and fat from the muscles downwards to the crest of the ilium.

(*B*) *Deep Vertical Incision.*—Go through the rest of the structures as if to remove the kidney through the lumbar route, along the outer border of the quadratus lumborum. In cutting the lumbar fascia, keep well backwards.

(*C*) *Fat.*—On exposing the fat do not tear and traumatize it, as is so often done, but carefully cut with the knife its thin fibrous covering. Do not insert the hand to pull at the fat, but seize hold of it with many pressure forceps and deliver it externally. It will now be found that the kidney is immediately beneath your fingers in the wound.

(*D*) *Delivering the Kidney.*—Do not use the hand to deliver the kidney. Firm pressure on the abdomen and traction made on eight or ten forceps applied to the fat, close to the kidney, will easily bring a movable kidney outside the wound. In some few instances the renal vessels are too short to allow the kidney to be delivered at all. Indeed, it is not necessary to have the kidney dragged out in order to decapsulate it, but if it comes out easily, I do it. When the kidney is situated rather high, and the traction on the forceps does not promptly bring it down, I find a long narrow retractor, with a slight concavity outwards, passed beyond the upper pole, greatly facilitates its delivery.

Splitting and Peeling the Capsule Off.—Incise the capsule longitudinally over the vertex of the kidney for about two-thirds its length, peel it from the cortex with the handle of the knife or finger until it is entirely separated, then slip one end of the kidney through the slit in the capsule, and then the other, and it will be seen that it forms a collar around the hilum of the kidney. If the kidney is movable, I utilize the capsule to suture it in place, and the organ is left in contact with raw muscular tissue which is more vascular than the fatty capsule and is, therefore, a more suitable structure to form vascular adhesions with the denuded organ.

Disposal of the Perirenal Fat.—Do not remove it or tear it to pieces, but gently displace it to the lower end of the kidney. It is but poorly supplied with blood vessels, therefore as little of the surface of the kidney as possible is left in contact with it, but when placed it furnishes an additional support to the organ.

Puncturing the Kidney.—In most of my cases I have freely punctured the cortex of the kidney in many places. This not only furnishes free drainage for inflammatory products, but also insures a thorough determination of blood to the parts, which hastens resolution and favors repair. It must also be remembered that the fibrous tissue formed for the purpose of repair in the absence of pyogenic organisms has a tendency later on to clear away rather than increase in bulk, and subsequently contract and become cicatricial. Of this we see many instances in surgery.

Drainage.—Drainage should always be established for five to eight days after decorticating the kidney. My experience leads me to use plain gauze and a small rubber tube for this purpose. It is astonishing the quantity of blood serum and urine that saturates the dressing for a couple of days. When drainage ceases remove the tube, and afterwards withdraw the gauze as it becomes loose.

Closing the Wound.—Use small-sized catgut to coapt the muscles and silkworm gut for the skin, the drainage tube and gauze emerging from the outer angle of the wound. After applying the dressing, place a firm pad of gauze or cotton on the abdomen below the ribs whenever nephrorrhaphy has been necessary.

HOW IS A CURE EFFECTED?

This has not yet been fully worked out. It is my opinion that the excellent immediate results are due to the relief of kidney tension and that the permanent benefit accrues in the cases demanding it from the establishment of collateral circulation with the diseased cortex. There are many instances of the formation of vascular adhesions in different parts of the body to support this latter fact.

EXPERIMENTS.

Before experiments on animals can throw any light on this subject we must first produce nephritis in them. In the production of this all efforts have been unsuccessful. I notice in the *Annals of Surgery,* April, 1903, Dr. H. A. Johnson writes on "Results of Decapsulation of the Kidney," being work done on dogs. He operated on 15 dogs; 5 died in from three hours to three days after the operation. The animals surviving the operation were killed. "Changes were studied two, four and eight days; two, three and four weeks; two and two and one-half months." The chief observation in his article is the eighth, viz., "In no case was there any considerable anastomosis between the renal and perirenal blood channels." It must be observed that in these experiments the kidneys of the dogs were normal and did not require additional blood channels for physiologic purposes, and also the organs were returned within the fatty capsule, which is but sparsely supplied with blood vessels.

In conclusion, I have no hesitation in affirming that decapsulation of the kidney in acute, subacute and chronic nephritis, both interstitial and parenchymatous, is a practical and effectual surgical procedure. Its limitations are not yet determined. While it can be pointed out that regeneration of kidney tissue is possible, it is folly to claim this procedure to be a panacea for Bright's disease.

10 Drexel Square.

DISCUSSION

ON PAPERS OF DRS. WHITACRE, GUTHRIE AND FERGUSON.*

DR. ARTHUR DEAN BEVAN, Chicago—The treatment of suppression of the urine is a subject to which my attention has recently been called by a number of cases, and one which I do not believe has been very well worked up by the profession. Recently I presented to the Chicago Surgical Society a case of anuria treated by surgical interference, and I found that the great majority of the members had not dealt in this manner with any case of anuria. This was my first case, the subject was rather new to me, and it gave me an opportunity to investigate it with some care. I came to the conclusion that the method had not been sufficiently emphasized and felt that the disease should be treated as a surgical entity. I attempted to make a clinical classification which would enable us at the bedside to determine on what line we should work in order to aid the patient. The classification which I decided on was as follows: 1, Obstructive anuria; 2, reflex anuria; 3, nephritic anuria.

The reflex condition, of course, is the one which is the most common and which gives the best prospects for relief under surgical interference. The reflex anuria, I came to the conclusion from the study of the cases, was a rather rare condition, although from the work of Getzel, the assistant of Israel, there can be but little doubt that such a condition does exist. Getzel's experiments, by increasing the renal tension, show that it would decrease the quantity of urine, in either or both kidneys, according to the application of the pressure, and when the tension was increased to a certain point in both kidneys, there would be entire suppression of the urine. Of course, in case of hydronephrosis on one side, fixture of the hydronephritic sac has been followed by relief of the anuria. The case presented by Dr. Whitacre, I think, comes under the nephritic group. Since reading this paper before the Chicago Surgical Society I have had an opportunity of doing a nephrectomy under nitrous oxid gas. The operation can be done in from five to eight minutes, during which time you can easily keep up the anesthesia, and this kind of anesthetic is especially valuable, as we are never sure of diagnosis until we make an exploratory operation. It may be a case of nephritic anuria; it may be a case of the obstructive variety, or there may be a stone in the kidney. A nephrectomy gives an opportunity of exploring the pelvis and relieving any abnormal condition which may be a cause of the anuria. I should throw out of consideration the decapsulation of the kidney for anuria and would say that the operation of choice was a nephrectomy under an anesthetic which could do no danger to the kidney tissue, such as nitrous oxid gas or infiltration anesthesia.

DR. WM. JEPSON, Sioux City, Iowa—It is hard for us to say, with our present knowledge, of just what value decapsulation of the kidney may be. One of the papers deals with the topic of who was the originator of the treatment by decapsulation; I know that Edebohls was not the originator, because we know that Redner did this operation in 1892 at the suggestion of Professor White, and he reported a number of cases before the British Surgical Association in 1898, in which he had this topic under consideration. In 1899 Israel reported 19 cases. So that I think we are safe in stating that Dr. Edebohls was not the originator of this method. Harrison reported 6 of these operations in 1896, and called attention to this method of stripping off the capsule in order to relieve the tension, and then, in addition, there were the cases of Professor Israel. Babinsky carried out these observations, and his work was proven by the fact that he removed sections of the kidney in order to determine just what the lesion was. Therefore, in cases of chronic nephritis we can hope for very little benefit from stripping of the capsule, but it is in those cases where we have an interstitial nephritis with an involvement of the surrounding structure and thickening of the capsule, and especially where we have a hemorrhage under the capsule, that this method will do the greatest amount of good. On the other hand, you will remember that Edebohls concedes the idea that by separating the capsule from the kidney it produces a restitution in the normal functions, even to the extent that the whole tubules have radically become regenerated. Now, with such opposing views, should we not be very careful and considerate as to whether these operations do or do not do the kidneys good? I am sure that we have all observed that marked benefit would follow an operation which was primarily undertaken as an exploratory operation. I think probably splitting of the capsule or of the kidney produces this change.

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* The paper of Dr. Whitacre appeared in THE JOURNAL, May 23, 1903.

Dr. Archibald McLaren, St. Paul, Minn.—I wish to emphasize the point made by both Drs. Bevan and Jepson, namely, that the advantage which we sometimes get in these cases of painful and uncomfortable kidneys, is often due to the splitting of the capsule, without the decapsulation. There are not many of us who are ready to recommend stripping the capsule in chronic nephritis as yet. We may later come to believe that this is the proper procedure. I can remember a number of cases where the conditions found were inexplicable with the results produced by merely splitting of the capsule, such as relief from the pain, disappearance of the albumin, etc., and many of these cases got considerable permanent relief. I have seen a few cases that have been decapsulated; although they received some immediate benefit, this improvment did not last long.

Dr. Richard H. Gibbons, Scranton, Pa.—The first man in all the world to recommend surgical interference for the cure of Bright's disease was Edebohls. All the others who did the operation did it incidentally, just as Dr. Ferguson did. They did not do the operation for the relief of Bright's disease; they did the operation for tension or some other cause which they supposed existed, but which they did not find when they operated. It was for this same reason that Israel did the exploratory operation and split the capsule, but Edebohls not only split the capsule, but he entirely decorticated the kidney; not only one kidney, but both kidneys, and afterward found that the condition could be relieved by surgery, and there is no man to whom credit for this work more justly belongs than to Edebohls, as he came out and recommended it for the condition, and would have had to have accepted his share of the damnation had it proved a failure. I believe so much in this method of splitting the capsule and detaching it in chronic Bright's disease as to have done the operation on my own sister, and at the same time I took out her appendix. I have had a number of cases of Bright's disease recover by this treatment, and many of them have been cases which have been proved to be this disease by the subsequent examinations of one of the best pathologists in Philadelphia. I had a case recently where I detached the capsule, and in which there was a number of multiple cysts in both kidneys, and the patient got well. Only four weeks ago to-day I operated on a young lady with a retroverted uterus, loose appendix and diseased kidney on the right side. She had all the symptoms of appendicitis, the diagnosis having been confirmed by Dr. Brooks of the Post-Graduate Hospital, New York. I referred her to Edebohls, as I hesitated to advise an operation without her seeing him. He recommended operation with fixation and decortication, which was almost entirely what I had recommended. She left the hospital last Sunday; her symptoms were improved in every way and the albumin in the urine very much diminished. Another case in relation to Dr. Whitacre's paper was a young woman on whom six weeks before I had operated for appendicitis, and expected to fasten a loose right kidney. I found a number of abdominal adhesions and decided to take out the appendix anteriorly. She got no relief and showed the usual symptoms of appendicitis and loose kidney. I operated on her several months afterward and fixed the right kidney, but did not touch the left kidney. She had all the symptoms of chronic Bright's disease, as proven by Dr. Brooks' examination. She immediately went into a state of surgical anuria. She died the latter part of the sixth day from complete suppression of urine, having passed six ounces up to that time. If I had only opened that woman on the left side, exposed her left kidney and decorticated it, the probabilities are that she would not have died from that condition.

Dr. Ramon Guiteras, New York—I think that the operation for chronic Bright's disease is still in its infancy, and it behooves us all to work with the object of improving our technic and bringing this operation to a position where it will be generally accepted by the profession.

Last year I read a paper before the American Genito-Urinary Association at Atlantic City, which was a preliminary report on this subject, and next week I am about to present a similar paper before the Congress of American Physicians and Surgeons in Washington. As there are so many varying opinions as to the advisability of attempting such an operative procedure, I have written to 150 of the most prominent surgeons in this country, and have mailed them circular letters covering the most important points connected with the operation, and have been very much pleased to find how many of them have responded to my letters. The opinions of these gentlemen, however, vary much. Some condemn it as an operation having no surgical or pathologic *raison d'etre*, while others reply at length, describing their experiences in a most enthusiastic manner.

Of course, as you know, the object of decapsulation of the kidney in this operation is to increase its circulation. Some of the leading medical men have likened the kidney after this procedure to the lung where there is a double circulation, the bronchial fortifying the pulmonary system. Dr. Johnson of San Francisco, in order to test the truth of this assertion, operated on a number of dogs in which he decapsulated the kidney for the purpose of investigation. He states that the blood supply is but slightly increased, if any, and a new capsule forms which in time becomes thicker and denser than that of the original one. It would take too much time to consider the question of Bright's disease, but as you know it is a disease of the kidney where either the connective tissue, the blood vessels, the Malpighian tufts or the tubules must be involved. Bad cases of Bright's disease very often show very little in the urine, while cases of transient albuminuria and cylinduria are often seen where no pathologic changes have occurred in the organ, although such changes will occur if the cause of the transient trouble is not corrected. These latter cases, we believe, are benefited or permanently cured by the operation mentioned.

Considerable has been said of late concerning unilateral Bright's disease, and some have spoken of this disease as present at times in only one kidney, or its being more marked in one kidney than in the other. It is a very difficult thing, it appears to me, on exposing the kidneys to say this kidney has nephritis and the other one has not, or this has nephritis to a greater or less extent than the other. Such fine discernment from a gross pathologic standpoint from viewing the outside of the organ when the capsule has been stripped off is, to my mind, next to impossible. In order to investigate the subject of unilateral nephritis I had the autopsy records of 500 cases of deaths from chronic Bright's disease looked over, and in only one case did I find the record of a purely unilateral affection, and this one, to my mind, could not be relied on. In only 14 cases out of the 500 did the records show that one kidney was more involved than the other. In nearly every case a very careful pathologic examination was made after removal of the organ.

Dr. L. L. McArthur, Chicago—Last year I undertook the relief of a chronic interstitial nephritis in the case of a young woman referred to me by members of this Society, Dr. Favill of Chicago and Dr. Norman Bridge of Los Angeles, who for six months had had the patient under treatment, and finding her but slightly benefited by medical assistance, treatment, change of climate, etc., had recommended removal of the capsules of her kidneys and requested me to do it.

I had little confidence in any good that might arise from the operation, but agreed to it because of the reports contained in the literature. Before the operation, I took pains, in addition to the examinations which they had made, to make a sep-

The following summary, founded largely on Heissler, includes the salient points in the evolution of the alimentary canal and its accessory organs, and points out (a) the condition of the structures during the period of primary parietal peritoneum before rotation; (b) the migration of organs, consequent on rotation, when they acquired their adult position and relations; (c) the structural changes in certain localities, in both visceral and parietal peritoneum, incident to adhesion between peritoneal surfaces; (d) the mechanism of rotation, whereby liver, stomach, spleen, pancreas, duodenum and intestines departed to greater or less degree from their primitive location in the mid-posterior line of the abdomen. I also append observation on 200 cadavers with reference to rotation.

1. The abdominal part of the alimentary canal, in the second week of embryonal life, consisted of a gut tract separated in part only from the yolk-sac.

2. In the third week, the gut tract assumes somewhat the form of a straight tube, presenting, near the head-end, caudad to the future stomach, the beginning of an evagination, the future liver.

3. In the fourth week the straight gut dilates cephalad, initiating the future stomach. The lumen of the bile passages is completed, and the liver-diverticulum divides, thus foreshadowing the future major lobes of the liver; the pancreas is evaginated from the duodenum, growing subsequently into the mesoduodenum and posterior mesogastrium.

4. The original straight gut in the fifth week becomes somewhat convoluted, and foreshadows the first tangible evidence of its future complexity in the U-loop, and a disposition to differentiate into large and small intestine. The loop consists of (a) an apex attached by the vitelline duct to the yolk-sac; (b) of a descending limb, which subsequently develops the major part of the small intestine caudad the duodenum; (c) of an ascending limb from which the future cecum, ascending and transverse cola, and distal end of the ileum are derived. The loop, by traction exerted through the yolk-sac, now projects its developing coils (up to the tenth week) through the open abdominal walls into the hollow of the umbilical cord, thus forming, according to Huntington, the so-called umbilical embryonal intestinal hernia. It should be noted that growth proceeds from the apex of the loop; that growth of the descending limb of the loop is rapid, while that of the ascending limb is slow.

5. In the sixth week the duodenum, enclosed in the mesoduodenum, and presenting its well-advanced hepatic and pancreatic evaginations, is fully differentiated from the stomach, and develops its primary duodenal loop. At this period the cecum is formed by buddation and the
is developing.

the seventh week the transverse and descending
indicated, and, by a process of unequal growth,
cephalic end of the colon differentiates into cecum
per and appendix vermiformis.

7. In the eighth week the gall bladder is formed, and
anlage of the spleen is first observed.

n the tenth week the loop of small intestine, which
time was encouraged to protrude into the hol-
e umbilical cord, begins to enter the abdominal
a circumstance due to the closing in of the soma-
on the future umbilical opening.

the twelfth week the histologic characters of the
peritoneum become established and rotation occurs,
by which organs, thus far in the mid-line of
cavity, begin to assume their adult relations.

At this period, the third month of fetal life, immediately preceding rotation, the parts of the alimentary canal with their investing peritoneum and blood vessels, are about as represented in the model. It may be in order now to review the salient features presented before rotation, in order that the post-rotatory locations and relations of organs, with consequent loss of peritoneum in certain places, may be better appreciated.

The stomach appears in the mid-line as a dilatation of the initial end of the intestine between two layers of peritoneum known as mesogastrium. As the stomach enlarges it displaces these two layers, and gastric peritoneum is the name given to the displaced membrane.

The double layer of peritoneum, which, enclosing the stomach, proceeds, ventrad to the anterior and dorsad to the posterior abdominal wall, under the name of ventral and dorsal mesogastrium respectively.

The liver, developed as an evagination from the ventral surface of the duodenum, acquires its artery from the gastroduodenal which originally traversed the space of the posterior mesogaster and entered the anterior mesogaster. As the liver grows, it displaces peritoneum (anterior mesogaster) and the displaced membrane is called hepatic peritoneum. The liver is now seen to occupy a place in the mid-line of the body, anterior to the stomach, between two layers of ventral mesogaster.

The two layers of peritoneum bridging the space between the stomach and liver, is a part of the anterior mesogaster called the gastrohepatic (and containing the root structure of the liver) or lesser omentum. Likewise, the two layers of anterior mesogaster extending from the liver to the diaphragm constitute the falciform ligament of the liver.

Pancreas.—The pancreas arises as an evagination from the duodenum. It grows into the mesoduodenum and into the adjacent segment of the posterior mesogaster.

The spleen develops from mesodermic tissue near the cephalic end of the stomach, between two layers of the posterior mesogaster, and subsequently takes up its adult location as a result of rotation.

The mesogaster at this period consists of two layers of peritoneum, enclosing the stomach, liver, spleen and pancreas. Its four parts unoccupied by these organs are the falciform ligament, the lesser omentum, the part attached to the posterior wall of the abdomen, and the great omentum.

The primitive duodenum extends from the stomach to the neck of the U-loop of intestine. It obtains at an early period its nourishment from the primitive gastroduodenal artery, from which the hepatic artery is ultimately derived. It has a well-marked dorsal mesentery, the mesoduodenum, consisting of two peritoneal layers.

The U-loop, from which the small intestine caudad of the duodenum and the future ascending and transverse cola are derived, is between two layers of primitive dorsal mesentery, which finally differentiates into the mesentery proper and the mesocola of the ascending and transverse cola.

It will be observed that at this period, before rotation, the walls are covered by primary parietal peritoneum, and that the alimentary canal, liver, stomach and pancreas are invested by primary visceral peritoneum.

As a sequence of rotation, a transposition of organs occurs by which the liver and spleen appear laterad to the stomach. The stomach itself assumes now a more horizontal position in place of its vertical embryonal position, and consequently retaining distorted relations to liver and spleen, through their respective omenta.

The posterior mesogaster evaginates to the left, forming great omentum, and its cavity the lesser cavity of the peritoneum. As Huntington puts it:

> The changes which are to be observed in the later stages, depend principally on a peculiar feature characteristic of the development of the dorsal mesogastrium. This feature consists in the extreme redundancy of the membrane, which grows out of proportion to the requirements of its visceral connections, and to a certain extent becomes independent of the direct mechanical purpose of carrying blood vessels to the viscera.

The mesoduodenum immediately succeeding the stomach has right and left surfaces which embrace the head of the pancreas. It falls to the right, presenting thereafter ventral and dorsal surfaces with the head of the pancreas resting on the vertebral column, vena cava, and right kidney.

Note the relation of the duodenum, superior mesenteric vessels and colon at the neck of the U-loop. Upon rotation, the duodenum is ventrad, the colon dorsad, with the vessels between. After rotation, the relation of the duodenum and colon are reversed.

Mechanism of Rotation: (a) The large intestine passes ventrad and dextrad across the jejunoileal coils toward the cephalic end of the abdominal cavity, and lies transversely along the greater curvature of the stomach. (b) The cecum turns to the right against the caudal surface of liver and ventrad of duodenum, and reaches the ventral surface of the right kidney. The colon is crowded cephalad; the small intestine to left and downward. The small intestine rotates about the axis of the superior mesenteric vessels, bringing the transverse duodenum beneath these latter, and in contact with the vena cava and aorta.

Peritoneal losses, the result of adhesion, are sustained in the following localities: (a) The ascending and descending cola lose their visceral peritoneum at contact point with the walls, while their respective mesocola become secondary peritoneum for the posterior abdominal walls in these regions. (b) The second stage of the duodenum loses its visceral peritoneum dorsad, where, as a result of rotation, it continges the abdominal wall and right kidney; also where it lies dorsad to the hepatic flexure of the colon. (c) The transverse duodenum suffers peritoneally where it rests beneath the superior mesenteric vessels, and on the vena cava, aorta and vertebral column. (d) The great omentum suffers concrescence of peritoneum at the contact point of the left kidney, pancreas, transverse colon and mesocolon, and on the posterior abdominal wall in the neighborhood of the diaphragm.

The following observations on peritoneum and alimentary canal were made with special reference to developmental sequences of rotation, on 200 bodies, and appear as a dissecting-room record:

1. Non-concrescence of great omentum. In ten instances adhesion between anterior and posterior layers of great omentum had not occurred.

2. Foramen of Winslow obliterated. In twenty-five instances, obliteration of the foramen of Winslow, presumably from inflammatory causes, had taken place. In seven of these twenty-five cases there were evidences of extensive inflammation of the right pleura. This would seem to be a practical illustration of the possibility of a septic fluid in the right pleural cavity gaining access to the peritoneum through the hiatus diaphragmaticus.

3. Meckel's diverticulum. In fourteen instances Meckel's diverticulum was present. The longest was five inches, the shortest one inch in length; the smallest was about the size of an ordinary sewing thread, and patulous.

4. Ascending mesocolon. In twenty-two instances there was a well-defined mesocolon and mesocecum. This was evidently a case in which fusion had failed to occur between the primitive mesocolon and the parietal peritoneum. The mesocolon was traceable to mid-line.

5. In twenty-six cases there was a well-defined descending mesocolon, and undoubtedly instances of a survival of the primitive descending mesocolon.

6. Primitive mesentery. In seven instances the only mesentery proper was a primitive one, attached about the superior mesenteric vessels.

7. Long mesosigmoid. In twenty-five instances the mesosigmoid was unusually long. In one case the omega loop was 28 inches in length.

8. Little fat in great omentum. In forty instances the great omentum contained practically no fat. In four of these forty cases, adhesion had not taken place between the anterior and posterior layers of the great omentum.

9. Mesentery of gall bladder. In four instances the gall bladder had a distinct mesentery; in one case it was 2 inches in length. (Now on display in pathologic exhibit.)

10. Extensive adhesions. In forty-five cases there were extensive peritoneal adhesions, both local and general. Especially extensive in regions of gall bladder and appendix.

11. Non-concrescence. In five instances there was no concrescence between the deep layer of the great omentum and the transverse mesocolon.

12. Loss of mesosigmoid. In twenty-three instances there was complete loss of mesosigmoid.

13. Arrested rotation. In four instances arrested or faulty rotation deposited the large intestine entirely to the left of the median plane of the body.

14. There are two varieties of peritoneal adhesions. (1) Physiologic; (2) pathologic. Histologically the two differ in degree only, and I believe it is generally conceded that the physiologic ones are the weaker.

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DISCUSSION.

Dr. LeMoyne Wills, Los Angeles—I have been fortunate to teach this branch for the past fourteen or fifteen years, and I know of nothing harder to teach a student than the practical understanding of the peritoneum. I think it is a great pity that Dr. Eckley did not have his apparatus here to-day, and I hope to be able to get one and use it. I do not think the practitioners of medicine who have been practicing fifteen or twenty years know very much about anatomy, and it would be a very good thing if we had more papers like this.

Dr. Richard H. Gibbons, Scranton, Pa.—This paper is far more important than a peck-measureful of papers on appendicitis. There is nothing that has given me more courage to go out and do my work than the teachings I got from Dr. Leidy on the peritoneum.

Veratrum Viride in Puerperal Eclampsia.—De Bustamente adds his testimony to that of others in regard to the value of veratrum viride in eclampsia. He reports in the *Revista Med. Cubana* four cases thus treated. The convulsions were definitely arrested in all, but severe vomiting followed in 2. One patient was injected three times on following days, the last time as a prophylactic measure, when premonitory symptoms indicated the return of the convulsions. Her pulse fell from 99 to 60 and 54 each time in an hour afterward. He injected 1 gm. of the fluid extract, but in future will inject half the amount at a half-hour interval, in the hope of obviating the vomiting. The effect on the eclampsia was unmistakable and has convinced him that this drug is superior to all others yet known for this affection.

PITYRIASIS ROSEA.

AN ERYTHEMATOUS ERUPTION OF INTERNAL ORIGIN.[*]

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The disease of which I intend to speak to-day does not belong to those very frequently observed. Its frequency, according to statistics, is between 5 and 12 per cent. of all skin affections presenting themselves for treatment. When we consider that the affection, by not causing imminent symptoms, is apt to be overlooked by the patient, its frequency will be somewhat augmented. If we add to this fact that the discernible features of the disease greatly resemble another skin eruption—tinea maculosa and circinata—we have another source of increased frequency, which must be accounted for when estimating the ratio of its occurrence among the dermatoses.

It is strange that even busy dermatologists will at times encounter no case at all, while at other times the well-known mysterious multiplicity of cases will materialize itself by a string of cases within a limited period. Hyde saw 87 cases in 18 months. The spring and fall seasons seemingly enjoy the distinction of producing the disease. Generally speaking, it is a borderline question between herpes tonsurans maculosus and squamosus corporis and pityriasis rosea; the latter, an erythematous eruption of internal origin.

HISTORY.

An affection like pityriasis rosea, with its sudden onset and with its profuse crop of lesions resembling those of an acute exanthema in some respects, could not easily have escaped the attention of dermatologists. It was not unknown to the older authors. In the chaotic condition of dermatology before Hebra, skin affections were described solely by their most discernible signs and effects, regardless of their anatomo-histologic conditions, and labeled with names the purport of which is sometimes hard to grasp. To mention only a few instances: Willan, the pathfinder in dermatology, in 1798, under the name, roseola annulata, mentions an affection which corresponds with the circinate form of the disease in question.

Rayer, in 1828, by the term, erythema annulatum, describes a skin disease which closely resembles pityriasis rosea.

In 1857, Erasmus Wilson,[1] under the name of lichen annulatus serpiginosus, describes a skin affection, "small, flat, erythematous discs, bounded by a sharp and distinct margin . . . . and converted into rings." A description which closely resembles pityriasis rosea.

In 1862, Bazin,[2] in describing the different forms of pityriasis, mentions one variety, pityriasis rubra aigu, depending on internal causes, especially on a "gouty and herpetic diathesis." He terms it pityriasis maculata et circinata. The former answers the description of the maculous form of our pityriasis rosea. Bazin was the first to mention also the annular form, and by so doing describes a hitherto unnoticed form of the disease, believing it to be of idiopathic origin.

Shortly after, in 1868, the affection was recognized by Hardy,[3] and excellently described under the name of pityriasis circiné. He cautions against confounding it with tinea circinata (*l'herpes circiné*), giving valuable differential diagnostic points.

The first to make the affection known as a disease *sui generis* was Gibert,[4] in 1860, one of the many great talents that the "St. Louis" in Paris has produced. His classical description is yet recognized as the standard by which the affection which bears his name is diagnosed. Gibert, however, describes only the macular variety of the disease, which is rather strange and adds somewhat to the confusion existing. As the disease in almost every instance occurs in the maculo-annular form, we must infer that Gibert has seen a peculiar macular form of it, or that there may be two forms of pityriasis rosea.

The disease was practically unknown here and on the continent with the exception of France, where the older authors had described it, as we have seen, rather imperfectly under various designations; when Duhring,[5] in September, 1880, in a paper read before the fourth annual meeting of the American Dermatological Association, *independently and without the knowledge of the* researches of others, published his six cases, giving an excellent description of the affection. Therefore, he may justly claim the honor of having been the first American to deal with it. In comparing his cases later he found them to correspond with an affection described by Bazin under the name of *pityriasis maculata et circinata*. Failing to find an account of it in Gibert's work he gives the honor of priority to Bazin. This, however, was an oversight, as in the third edition of Gibert's book, which appeared in 1860, two years before Bazin's, on page 402, Gibert describes the disease which bears his name as pityriasis rosea.

The views on this disease took a sudden change when Hebra,[6] in 1876, described what he thought to be a disseminated form of body ringworm, occurring as an acute and general eruption in form of maculæ of pale red color, with a fine furfuraceous scaling. He and Kaposi called it herpes tonsurans maculosus et squamosus. It is strange that such acute observers do not mention the annular form as we are wont to see it, according to the modern description of pityriasis rosea. From this time on the path of pityriasis rosea became a troubled one. The first to take up the gauntlet against its parasitic nature was Horand[7] in Lyons, 1876. He describes seven cases in children, resembling pityriasis rosea and corresponding with Hardy's description of the disease. He declares it to be of non-parasitic nature, although two brothers who slept in the same bed had it.

The contemporary literature shows only a few and solely French contributions. In 1877 Vidal,[8] who called it erythéme desquamatif pseudo-exanthematic, and Metton;[9] in 1880 Nicholas,[10] whose description rather fits eczema seborrheicum psoriasiforme, published accounts of the affection. In 1881 Oatman[11] published his case resembling tinea versicolor, except that it was brighter and redder.

Behrend,[12] in Berlin, 1881, was the first German author to write on this subject. He declares pityriasis rosea an independent disease, not extremely rare and most probably of parasitic, although not of trichophytic origin. He wants it to be termed roseola furfuracea herpetiformis. In 1882 Vidal[13] describes a parasite found in the scales of pityriasis rosea which he calls microsporon anomoen or dispar; the pathognomonic significance of which is, however, much contested.

The literature on this topic now became somewhat more extensive concerning the entity of pityriasis rosea. Hans[14] describes a case where a whole family developed pityriasis circinata from a trichophytic dog. From this he tries to establish the identity of both diseases. In 1882 Weyl[15] pleads for the independent standing of the affection, and Behrend[16] again emphasizes that it is not only different from ringworm, but coincides with Vidal by believing in a parasitic and non-parasitic form of the disease.

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[*] Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Cutaneous Medicine and Surgery, and approved for publication by the Executive Committee: Drs. H. W. Stelwagon, W. L. Baum and J. A. Fordyce

In 1882 Jamieson[17] calls it an imitator like most skin diseases. In 1884 Colcott Fox[18] describes the affection in children and establishes Gibert's claim of priority. In 1885 Chapard[19] and Kinnier[20] wrote on this affection, and Ferrari[21] coincides with Vidal as regards the presence of his parasite.

Blanc,[22] Bulkley, Fox and Robinson[23] describe this affection, being doubtful as to its origin. In 1886 Jaquet[24] writes of this disease as having some connection with gastric dilatation. In 1887 Brocq[25] published his celebrated article in which he draws attention to the so-called "herald patch" as a distinctive diagnostic sign. Peroni[26] observed a small epidemic of herpes tonsurans maculosus et squamosus Kaposi, which he thinks to be a roseola furfuracea trichophytica. He alleges its contagiousness, which is, however, open to doubt. In 1888 Boeck[27] speaks of the disease, and Unna[28] touches on the relation of pityriasis rosea to seborrheic eczema.

In 1899 Barduzzi[29] describes three cases with no fungus found; his inoculation experiments, as did Weyl's and Koebner's, proved negative. Moingeard[30] regards it as a general infection with a cyclic course. Jaquet[31] again emphasizes its connection with gastric disturbances, and Besnier[32] points out the analogy existing between pityriasis rosea and eczema seborrheicum and its coincidence with gastric disorders. Fournier[33] dilates on a case, persisting four years, remarkable for the confluency of its lesions. Feulard[34] thinks dilatation of the stomach to be an etiologic moment. Hallopeau[35] relates a case of four years' standing and von During[36] declares it to be an independent disease. Mracek[37] describes a case of herpes tonsurans universalis complicated by polyarthritic rheumatism. In 1890 Thibierge[38] enlarges on the importance of the Fournier "medallions," and gives an excellent histologic résumé. Köbner[39] mentions a case in a syphilitic with mucous patches of the pharynx, finding micrococci; to which, however, he does not attribute any etiologic dignity.

In 1891 Moingeard[40] regards it as a general infection. Tenneson[41] reports a case of six months' standing. Lefevre[42] describes a case where the eruption did reappear intermittently on the same places.

In 1892 Lassar[43] states that many eczemas of unknown origin are caused by pityriasis rosea being irritated by treatment, and touches on its mechanico-chemical etiology. Havas[44] cites a case of herpes tonsurans maculosus with fungi of trichophytosis.

In 1894 Oro and Mosca[45] published a very exhaustive exposé of the entire question of pityriasis rosea. In 1895 Phillips[46] reports a case of nine months' standing complicated by jaundice. In 1896 Corlett[47] gives excellent points in differentiating this affection from syphilitic eruptions. Tandler[48] gives an exhaustive histologic report of the affection in question.

Sabourin[49] reports a case each of pityriasis rosea and trichophytosis cutanee, finding no fungus in the first, but finding it in the latter, and states that the two affections had nothing in common with each other. Kromayer[50] thinks it is caused by extraneous agents. In 1899 Rasch[51] writes on the topic, and Blaschko[52] points out that in pityriasis rosea there is exfoliation from the center to the periphery, while in psoriasis desquamation takes place from the periphery to the center. Fournier[53] regards it as a pseudo-exantheme of non-contagious character.

In 1900 Hollmann[54] and Loewenbach[55] render up-to-date histologic contributions, and Levallé[56] describes it as a constitutional affection like syphilis. Fiocco[57] regards it as of endogenic origin of toxic nature. In 1902 Sabouraud[58] furnishes an excellent histologic description.

ETIOLOGY AND PATHOLOGY.

The etiology of pityriasis rosea is considered uncertain. There is a tendency at present to regard it as a constitutional affection. The earliest observers thought it to be dependent on an arthritic or herpetic diathesis and classed it among the "arthritides pseudo-exanthematiques." (Gibert, Hardy, Bazin.)

A minority of observers, however, think it to be of mycotic origin. Hebra, Kaposi, Hans and Havas hold the eruption as identical with herpes tonsurans maculosus et squamosus, and consequently of trichophytic origin. Behrend and Weyl regard it as a parasitic disease of some kind. Vidal holds his contested microsporon dispar to be the causative factor, and Ferrari coincides with him. Bulkley and Lustgarten[59] lean towards its microbic origin, and think that all cases are not identical in their etiology.

The frequent coincidence of pityriasis rosea with gastric disturbances can not be ignored any longer or looked on as accidental. Excellent observers have recorded such a combination. Jaquet found it combined with gastric dilatation and cites Bouchard, who found pityriasis rosea five times in patients so afflicted. Feulard and Besnier attribute a causative influence to gastric dilatation, and Tenneson alludes to the fact that other dermatoses are also caused by gastrointestinal disturbances. Phillips have seen a case of nine months' standing, complicated twice by jaundice, and Allen[60] reports cases with acute or chronic digestive derangements, and also a case of an habitual drunkard, who had seven attacks, especially after swearing off, which seemed to disturb his digestive organs. Fordyce and Piffard[61] regard it as caused by a parasite of unknown origin. Fiocco states that in seventeen patients having had this affection the urine constantly contained peptone and indican and that its toxicity was greatly increased. Moingeard already regarded it as a general infection. Sherwell[62] in his cases noticed a rheumatic tendency and has seen it associated twice with the puerperal state. Fox and Jackson[63] regard it as non-parasitic. Stelwagon, Crocker, Hyde[64] look on it as a disease *sui generis.*

My cases also suffered from various chronic stomach disorders, and some of them reported having had acute gastric disturbances when the eruption first appeared. Besides this affinity between stomach disorders and pityriasis rosea, most authors concede the existence of systemic disturbances, due to some micro-organism, absorbed by the circulation and distributed on the skin (Crocker). The sudden outbreak, the character of the eruption, its non-contagiousness, its cyclic course, diffuse distribution, the mode of its appearance and its rare recurrence, all point toward the opinion that the disease in question is of endogenous origin, most probably transmitted to the skin by autointoxication. Although recurrences have been reported by Allen, Fiocco and a few others, yet this would not vitiate against the disease being of endogenous origin. In rare instances we find a recurrence of smallpox, or measles also, without questioning in the least their endogenic origin.

Those who yet believe in its extraneous causation deduce their views from observations contestable. According to Lassar, Hutchinson, Kromayer, it developed after the donning of new, unlaundered underwear, or from old underwear that had been kept in ill-ventilated places. Their cases occurring mostly in the spring and fall when such a change in wearing apparel usually takes place, they look on pityriasis rosea as a seasonal disease of extraneous origin. Lassar reports a case where the pressure of a defective spring from a truss caused the eruption.

Kromayer has seen a case develop on both legs after putting on new stockings. Bulkley[65] observed a case in an attendant at a Turkish bath; so did Allen,[66] whose patient had a number of recurrences, though constantly undergoing steaming and washing of the surface. It can be seen from these few selections that a chemical or mechanical irritation, especially of textile fabrics, is looked on as an etiologic factor. Lassar has seen similar irritative conditions to cause or aggravate lichen, eczema or psoriasis.

To refute this assumption I may be permitted to state that irritation may cause, in persons so disposed, an eruption of some kind or resembling the one already existing. We all know the proneness of syphilitics to evolve on irritation kindred lesions to those already existing. Syphilis and irritation is a caption well known to us. The condition called urticaria factitia, where mechanical irritation of the skin provokes red elevations with pale centers, simulating symptomatic urticaria almost absolutely, is another instance of mimicry of skin lesions through outside influences. But we are not authorized to say that these mechanical irritations play the rôle of an etiologic factor. Here the vasomotor disturbance of the skin predisposes it to respond in this peculiar way and not the action of the finger nail or lead pencil which does the provoking scratching.

Some people may possess a latent disposition to develop pityriasis rosea, an eczema, a lichen or a psoriasis; they may in a manner have developed already—probably yet unnoticed—initial lesions of their kind, when a casual mechanical or chemical irritant will furnish the necessary impulse for the spreading of an already existing or the provocation for certain new lesions. Here, again, the disposition is the etiologic factor and not the provoking irritant.

I therefore think the theory that a chemical or mechanical irritant alone will cause pityriasis rosea to develop is untenable. Beside, in a case of pityriasis rosea recently observed by me, where an abdominal bandage was worn after an operation for appendicitis, it was just the area covered by this bandage which was devoid of a single lesion.

As to the cases of the bath attendants, I think the constant steaming and washing served as the provocative agent to these individuals so predisposed. A mycotic process would surely have yielded to the continuous cleansing procedures to which these people were exposed. Besnier[67] has shown that the most diverse pathogenetic elements may cause identical erythemas, a proposition which everyone of us has no doubt verified. Provocation of lesions similar to already existing parent lesions are frequently observed. I have repeatedly elicited lesions of lichen planus in patients so affected by a slight scratch of a needle.

As to the contagiousness of the disease, this has been thought of only in connection with a parasite ab extra. I have dwelt on this point in the etiology, but will mention a few more cases, which seemingly point towards the contagiousness of the disease.

Crocker[68] observed two cases in a family, Zeissler[69] in a husband and wife, Fordyce[70] in husband and wife and two sisters, Fox[71] in mother and child, but regards it as accidental; Johnston[72] in a boy 5 years old, where the throat showed eruptions identical with those of the skin, even to the scaling. The fact that different members of a family had the disease is not proof conclusive of its contagiousness. The few cases occurring in families are *nil* when compared to the promiscuous appearance of the disease in general. In families the same environment, the same food, similar habits prevailing, may cause similar diseases, without taking recourse to contagion. The disease is known to have occurred in small epidemics among people in different walks of life.

I had a series of cases within a comparatively small space of time; within the last two weeks of my service at the German Poliklinik five cases presented themselves for treatment. All of them complained of general and three of them of gastrointestinal disturbances before and while the eruption took place. In all of them the urine contained indican, but I could not find peptone as did Fiocco. Again, it is significant, in spite of the numberless examinations by the most competent men that the presence of a fungus has not yet been revealed.

PATHOLOGY.

Philippson[73] aptly maintains that, while according to the teachings of general pathology the propagation of diseases in the system is due to pathogenic substances carried through the blood, in dermatology this mode of propagation is rarely taken into account. In the pathology of exudative erythemas their vasomotor origin and angioneurotic character are usually emphasized. But it is equally true that the metastatic theory offers a more natural and tangible explanation. This is under certain restrictions true. It is the transmission of irritant substances to the skin, the alterations in the walls of the vessels that cause the erythema lesions. If pityriasis rosea be a skin affection of exogene (mycotic) origin, the irritation ab extra would surely cause a more active inflammation of the epidermis; but, being of endogene (toxic) origin, the mild changes in the upper strata of the skin are explained. The irritative substance on its way from the blood to the surface undergoes certain alterations, satisfies certain affinities, is attenuated, as it were. The process will invade the deeper strata of the skin first and, expending its force, the main lesions will be found there.

If pityriasis rosea be a mycotic disease, this external irritant would invade the upper strata of the skin first, causing there the main anatomo-histologic changes to appear. But this is not the case here, because the erythematous macule has its starting point from within outward. On the other hand, ringworm works its way from without inward. This conception of the evolution of pityriasis rosea makes the seeming incongruity of Loewenbach's studies better understood. He has found in pityriasis rosea, with its clinically mild symptoms, more profound histologic changes in the cutis than in ringworm of the body where the clinical symptoms and the epidermic changes are of a more formidable character. This means that the milder pityriasis rosea affection is combined with deeper histologic changes and the severer affection—ringworm—with milder ones. Of course, as the process advances, ringworm will show deeper histologic lesions also. And there will be a period where an older lesion of ringworm will histologically resemble a recent lesion of pityriasis rosea in the deeper structures.

It is of only secondary importance for our purpose whether this erythema is caused by vasomotor disturbances or by vessel alterations. The main factor is that the maculæ of pityriasis rosea are of an erythematous character clinically as well as histologically.

According to my histologic findings, the local lesions of pityriasis rosea are caused by the alterations of the vessel walls, produced most probably by the circulating toxins. This is what Philippson has found to be the case in erythema. Török and Vas,[74] who also contest the angioneurotic origin of urticaria, maintain that erythematous alterations of the skin are nothing else than the reactive irritation phenomena of the vessels. I would add that erythema is the simplest kind of inflammation, an inflammation of a very mild type, a metastasis caused by the alterations of the walls of the vessels of short duration.

Pityriasis rosea shows clinically only congestive hyperemia of oval or circular maculæ of pale red color, shading off towards the center into yellowish red, paling on pressure; and histologically emigration of leucocytes, edema of the cutis and no perceptible change in the epidermis, with only slight furfuraceous scaling. While in the typical inflammations graver tissue and epidermic changes are present. Such lesions have a brighter color, do not fade on pressure, do not show the particular changes of hue in color; they show infiltration and desquamation on a highly inflamed basis. Mracek[75] remarks that strict proof has not been adduced yet whether an angioneurotic process can not eventually cause inflammatory changes in the skin.

In applying these enumerated characteristics to pityriasis rosea we must concede that the affection is of an erythematous character and, like all erythemas, of endogenous origin. The pathogenic substance may have been produced either in the system or carried into it from outward sources and then transported by the blood current into the capillaries of the skin. From these conditions erythematous lesions result.

SYMPTOMS AND DIAGNOSIS.

After what has been said previously little remains to characterize the symptoms of pityriasis rosea. The clinical picture presents at first small flat papules of variable size, out of which develop discreet, barely elevated, moderately irritable, oval or round maculæ. The color is of reddish or pale red or salmon tint, and paling on pressure.

Just the same as the histologic picture, so the clinical form and color differ with the age of the lesions. As the maculous circinate and annular forms present different evolutions of the original type, so the tint accompanying each stage will be different according to the age of the lesions. It will vary from a pale red or salmon to a dull reddish color of the fully developed lesion. Fading begins in the center, extending towards the margin and lending then a grayish tint, like milk-coffee to the vanishing eruption.

The margins of the lesions pass imperceptibly into the surrounding healthy skin. There is no vesiculation, exudation or papulation present. By peripheral extension and central subsidence the annular variety is produced.

But even this annular variety hardly shows a palpable border. The discs fade off in the center to a pink, and in the ringed variety, through central involution, a wrinkled or shriveling minutely radiated center is produced (plissé), which lies within an oval border of a roseate zone, lightly scaly towards the margin. This configuration represents Fournier's "medallions." About two weeks after the appearance of the "herald patch," the whole trunk becomes covered with innumerable spots, discs and circles; a profuse eruption like that of an exanthema taking place all over the body with the exception of the hands, feet and genitalia, which are almost never involved. Sometimes the maculous form alone supervenes, but mostly the macular circinate form is represented. The appearance of the eruption, however, does not always show this—so to say—classical type. In rare instances it shows up in a rudimentary way, exhibiting only scarcely visible spots of dull red macule, especially in the axillary regions. I have seen a case of follicular involvement, somewhat greasy to touch, resembling eczema seborrheicum. At first the lesions do not show any scaling, but later fine furfuraceous scales appear. *On scratching a recent not yet scaling patch with the finger nail, invariably some scaling can be produced in its center, which is the more surprising, as there was apparently not the slightest indication of such.* I regard this sign as *pathognomonic,* as I could not elicit it in any other lesion of an erythematous character. With its help we were enabled in our class to diagnose the eruption in its earliest stages, verifying it later in every instance. The explanation for this strange condition is found in the histologic change of the rete cells. The slight intercellular compression which the edema exerts on the succulent rete cells is not strong enough to cause desiccation of them in their upward move. Later, when a more abundant parvicellular infiltration has taken place, the regeneration of the epidermis cells and with it their desiccation and following desquamation will be a livelier one and a spontaneous desquamation will ensue.

A very useful help to diagnosis is the "herald patch," "plaque primitive" of Brocq, "plaque maitresse" of Besnier, our primary or parent spot. This is a hyperemic disc with a tawny yellowish center, of various dimensions, from the size of half a dollar to several inches in diameter. However, it is not present in every case. But, as it appears about two weeks before the general eruption breaks out, and as patients rarely present themselves before this time, there is a strong possibility of its being overlooked. I have seen it only twice in fourteen cases; once under the right clavicle and once in the left epigastric region. Allen[76] observed it occupying the whole chest wall. Behrend under left clavicle, assuming an annular form, and on the left sterno-mastoid region. Fournier on left forearm. Fordyce on abdomen, etc.

This primary lesion, appearing two to three weeks before the general eruption sets in, lends the disease, as to its evolution, a resemblance to syphilis. It has a primary lesion, an acute course, spontaneous involution and is often associated with slight systemic disturbances, like rise of temperature, anorexia, etc.

One of my cases presenting itself at my class, and in which the face was also affected, showed quite grave catarrhal symptoms—conjunctivitis, coryza, puffed face, reddened tonsils and swollen cervical glands accompanying the acute development of the affection. These acute symptoms usually cease as the eruption has established itself. But, in most of my cases, I have heard complaints of lassitude and more or less discomfort up to the time when the eruption commenced to fade away. Itching did not annoy my cases enough to complain of it.

I will only mention a few of my cases cursorily:

CASE 1.—J. M., 22 years old, presser, presented himself at the German Poliklinik with an eruption showing dissemination over trunk, arms and legs, including face, of rosy spots and circles, not raised over the level of the skin, with slightly furfuraceous scaling. The youngest maculæ do not show scaling, but slight desquamation can be elicited by scratching. Complains of general malaise, face somewhat puffed, eyes suffused from a conjunctivitis. Microscopic examination revealed no fungus, only the common microspores of the skin.

Case 2.—L. M., 26 years old, private patient, traveler, healthy looking individual. Shows general eruption of a macular and circinate form on the trunk, front and back, on upper thighs, and a few on the crures. Face not involved; pretty lively desquamation. The very intelligent patient complains of lassitude before and since the outbreak of the eruption. He distinctly remembers having had stomach and intestinal disturbances previous to the appearance of the eruption. No fungus found. Remembers herald patch under left clavicle about ten days before eruption.

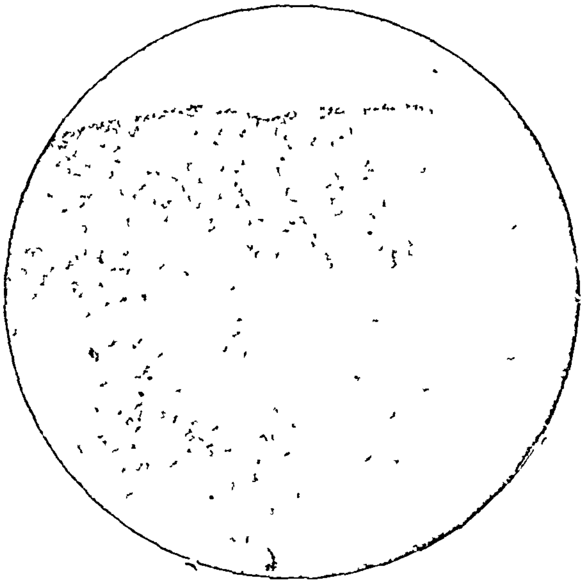

Fig. 1.—X 125. Showing spindle cell inflammation around vessels in the papillæ and also lower down in the cutis, edema in rete fairly well preserved, stratum granulosum, and separation of cells in stratum corneum.

Case 3.—L. B., 24 years old, upholsterer. When presenting himself at my class, he had the eruption for three weeks, disseminated over the whole body down to the ankles, also on face. On neck, coalescing maculæ and segments of rings, very irritated—most probably from collar—raised and accordingly very scaly. This case exhibits the most abundant desquamation in all my observation. Patient has a few maculæ on buccal lining, distinctly characterized by their redder appearance from the surrounding mucosa. No syphilis. Very light smoker. Remembers no herald patch, but complains of chilly sensation, loss of appetite and weakness, which enables him to work only half time. When the eruption appeared he had a sore throat, whether coincidentally or not can not be decided. No fungus.

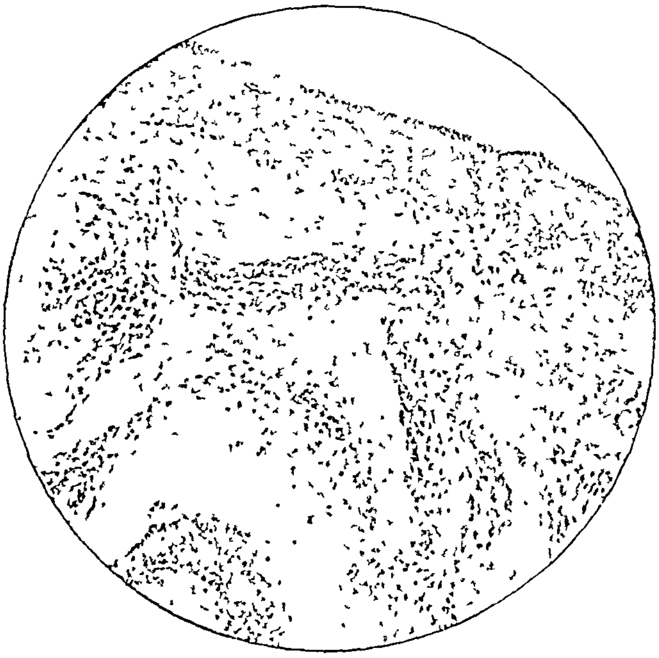

Fig. 2.—X 125. Showing spindle cell inflammation around small vessels in a papilla, and the vessel filled chiefly with white blood cells. The entire epidermis is well preserved.

Case 4.—A. M., 36 years old, teacher. Presented himself at my class and shows a general maculous, only rarely gyrated eruption of three weeks' standing, disseminated especially on chest down to the pubis and on back. Face not involved, neither are extremities. Slight itching. Remembers herald patch to the left of the navel about four weeks ago, which he thought to be of no further consequence. About two weeks ago he felt general malaise and, as his children were down with measles and his throat was somewhat irritated, he had himself examined elsewhere and found, to his dismay, an eruption which was thought to be measles. On examining him, I found no temperature, no cough, no other objective symptoms besides the eruption, which was vanishing in some and appearing in other places. Some furfuraceous scaling. On macule not yet scaling, such can be elicited as usual by scratching with finger nail. Beside slight itching, no subjective symptoms. No fungus.

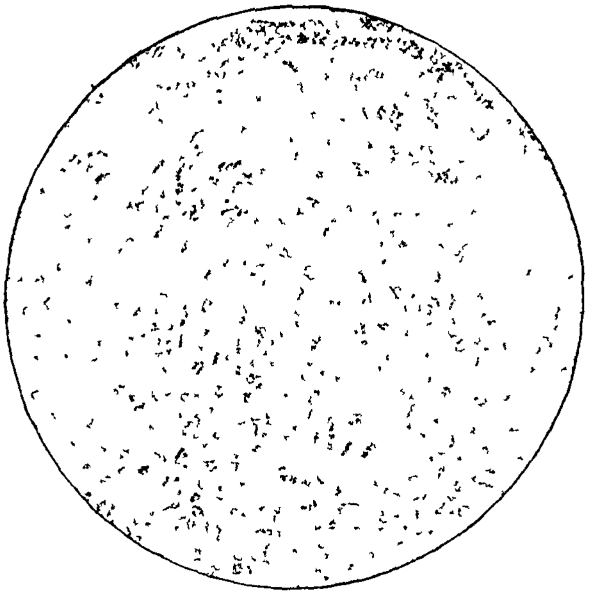

Fig. 3.—X 350. Shows how the products of inflammation in the papillæ break through into the corium. The intercellular edema is very marked.

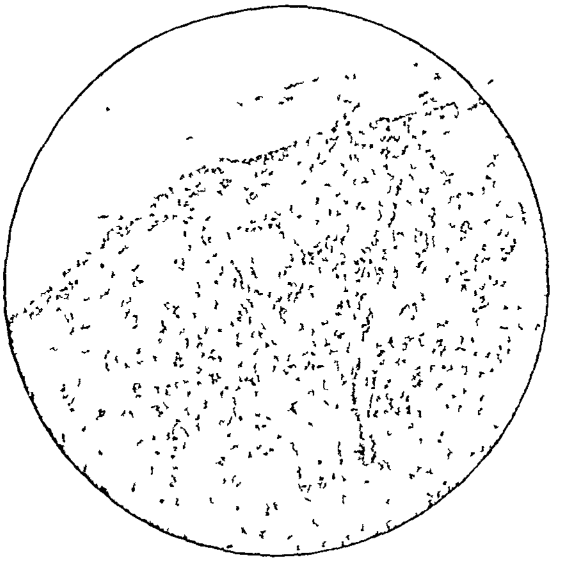

Fig. 4.—X 350. Shows how fine exfoliation takes place which appears as scales clinically, stratum granulosum not much altered, prickle cells and intercellular edema, inflammation in the papillæ.

I will not enumerate any more cases, of which I had fourteen in my service and two in private practice within four months, as they do not show any aberration from the well-known clinical features. When possible, a piece of skin was dissected and histologic examination was made. From the scales, cultures were sown out, which, however, in every case proved to be negative.

MICROSCOPIC REPORT OF PITYRIASIS ROSEA.

1. The examinations of scraping (epithelial scales) from the eruption proved absolutely negative as to the finding of any fungi, both by the direct examination of the scales and by cultural methods on potatoes, bread and water, nutrient agar, etc.

2. The examination of sections made from the extirpated tissue did not reveal the presence of any fungi when stained according to the most approved methods of Waelsh, Unna, Sahli, etc.

3. The histologic examinations of the specimens seem to give much more information as regards the pathology of the disease.

The picture is one of an inflammation, characterized by a proliferation of spindle cells around the blood vessels in the cutis, besides the ordinary change of a mild exudative inflammation, viz., emigration of leucocytes, exudation of serum and diapedesis. (Fig. 1.)

In the early stage of the disease (macular eruption) this spindle cell formation can already be noticed around the blood vessels. (Fig. 2.) In the more advanced stages this spindle cell formation is very characteristic. As this process takes place around all the smaller vessels, it is at once evident how the corium becomes broken and infiltrated in many places, as the small vessels in the cutis run up in the papillæ just to underneath the corium. (Fig. 4.)

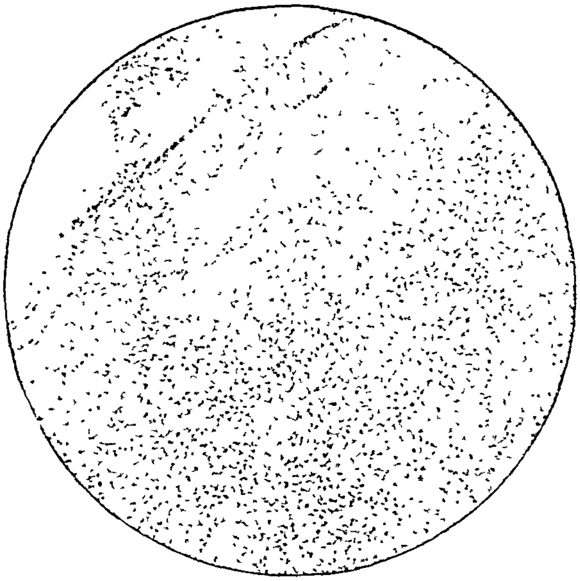

Fig. 5.—X 125 Herpes tonsurans corporis. Shows great changes originating in epidermis, with secondary round cell infiltration just beneath corium. (*By courtesy of Dr. Max Joseph, Berlin.*)

The consequence of all this is that the cutis and epidermis become edematous and appear very loose and succulent. (Fig. 4.)

In the epidermis the cells in the rete appear succulent and the lymph spaces enlarge. The stratum granulosum is well preserved except in a few places.

The stratum corneum is also edematous and the result is that there is a separation of the individual cells. This accounts for the fine exfoliation clinically. There is no tendency to the formation of vesicles. (Fig. 5.)

As the disease is not a localized one in the true sense of the word; but really a general eruption, I am inclined to look on the same as one which is due to some irritant which is brought to the periphery from within the body, the same as in erythemas, and therefore regard the condition as an erythematous disease.

To define the microscopic picture, I would say that we have a mild subacute exudative inflammation, affecting chiefly the cutis and tending toward resolution.

I will show you the micro-photograms of the specimens later, which will conclusively show their anatomohistologic character and secure for the affection a place among the idiopathic erythematous eruptions.

DIFFERENTIAL DIAGNOSIS.

The disease with which it is most frequently confounded is the *disseminated ringworm* of the body. This is due more to a certain preoccupation and bias than to actuality, because there is no more identity between the two affections than there is between varicella and pemphigus, or between measles or a maculous drug eruption. The gross form looks somewhat alike, that is all. Herpes tonsurans maculosus and circinatus, if it should begin with a large solitary spot, will differentiate itself from the "herald patch" by its more clearly defined hyperemic outlines, its raised margin and the regularity of its circle. There is slight vesiculation around the borders and the papular element is more pronounced. The circinate ringworm does not start from so many centers and does not show symmetry and never breaks out so suddenly and profusely. As an auxiliary I may mention that circinate ringworm likes the region of the dorsum of the wrist, the region under the chin, the sides of the throat. The center of a ringworm patch which has extended towards the periphery recovers and looks normal, not wrinkled and tawny, as in pityriasis rosea. The hairs are always affected in ringworm; never in pityriasis rosea. The patches of ringworm extend centrifugally very rapidly; in pityriasis rosea they are more fixed. And last, but not least, the fungus of the trichophyton tonsurans can be found in every case, while it has never been found in our affection.

I firmly believe, as a pupil of the great Hebra and with due reverence to his master genius, that had he lived to see the evolution of our etiologic knowledge, he would have been the first in his high-minded integrity to recede from an untenable position and declare his cases of herpes tonsurans maculosus et squamosus to be what they really are—a diffuse erythemato-squamous systemic affection.

The other diseases with which pityriasis rosea could be confounded I can dismiss with greater dispatch. From *seborrheic eczema* it differs in its distribution. Here, too, the border is more raised, the lesions show a deeper infiltration, the scaling here is a more prominent symptom, the lesions are of a brighter red and have a peculiar fatty, greasy touch.

I have found seborrheic eczema to spontaneously yield scales, even in places where it is exposed to maceration, *while pityriasis rosea will do this only when scratched.* While common on trunk, its predilection of site is on center of chest and back. I have found associated with it extensive seborrhea of the scalp and a hyperemic and scaling corona seborrheica on hairline border, either entirely encircling the head or partially so, and then mostly on post-auricular or temple region. The individuals so affected are mostly anemic and exhibit the peculiar shiny greasy-gray aspect of their skins with slight general pityriasis. Furthermore, there is no such sudden development as in pityriasis rosea.

As to *roseola syphilitica,* the distinguishing points are many. And yet, men like Vidal and Fournier confess to having mixed up pityriasis rosea with it, and that only the characteristic medallions helped them to make a diagnosis. It is with the *early syphilide* and not with the later manifestations with which it is most frequently confounded. Many lightning cures of alleged syphilis are attributed to the skill of the medical attendant and the administration of mercury, where nothing else than a natural involution of pityriasis rosea lesions has taken place.

The macular syphilide is also a general eruption, but it is redder and does not show the roseate hue of pityriasis rosea. Neither is the salmon color of the center present, nor does its center clear up at all, but the whole lesion fades away simultaneously without forming circles. In the syphilitic lesion the papular element is more pronounced; there is clinically and histologically a higher type of inflammation present. Scratching of a macule with the finger nail does not elicit, like in pityriasis rosea, fine furfuraceous scaling; neither is there spontaneous scaling present. In the late secondary annular syphilide we find the lesions absolutely elevated above the surface of the surrounding skin, infiltrated, of high red color, but scaling very scarce and elicited only with difficulty by scratching. Although exceptional, the throat may be slightly affected in pityriasis rosea—in syphilis we will always find acute disturbances of the buccal mucosa and tonsils and involvement of the glands. These points will suffice for a diagnosis, even if a history of syphilitic infection is wanting.

I may mention as an auxiliary that I have found that syphilitic efflorescences, when touched with the finger nail, always make the patient complain of pain, while on the normal skin, or in other erythematous eruptions, this interference is not felt at all.

From *psoriasis* it is easily distinguished, when the latter is well developed. A confusion can occur only in the recent punctate lesions in persons who are perspiring abundantly, or in summer, when the lesions naturally are moist. But, on scratching, we have here the punctate hemorrhages. The topography of the lesions—extensor surfaces involved with predilection—must be taken into consideration. In the so-called atypical psoriasis with anomalous localization, or in those cases where the scales do not show the white mortar-like brittle characters, but only soft, greasy, grayish-white scales of eczema seborrheicum psoriasiforme, the diagnosis may be doubtful for a moment. But here, too, the absence of a herald patch, the polycyclic evolution, the scaling, the amount of which in these atypical cases even far exceeds the most abundant scaling of pityriasis rosea, will soon clear up the diagnosis which, I am sure, will but rarely if ever confront the dermatologist.

TREATMENT.

There is hardly a necessity for such. Against the general malaise, a saline cathartic; against the anorexia or other gastric and intestinal disturbance, the exhibition of diluted muriatic acid and nux vomica will be in order. If itching is complained of, bran baths and mild salves, probably with the admixture of salicylic acid or resorcin, are to be recommended, or spirituous lotions of the same drugs may be applied.

The much-vaunted influence of higher percentuated salves with salicylic acid, resorcin, sulphur, naphthol, with a view of their parasiticidal virtues, is absolutely *nil.* There is no fungus to kill in this affection, and whatever changes these salves may elicit on the skin—bleaching and desquamation—are due to their reductive qualities of the remedies incorporated in them.

In the foregoing I have tried to add a modest mite towards the elucidation of the pityriasis question, the place of which dermatosis in the system, I hope, will soon be established beyond a reasonable doubt.

In conclusion, I wish to express my thanks to Dr. Henry Kreuder of New York City for his valuable assistance in preparing the accompanying microphotographs and histologic examinations.

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DISCUSSION.

Dr. Henry G. Anthony, Chicago—I am perfectly familiar with pityriasis rosea and its diagnosis, and I have looked on it for a considerable length of time as a rare form of disease in my practice, but during the past year I have seen a number of cases, and discussing the subject with other dermatologists in Chicago have learned that there are a number who agree with me that the disease is decidedly on the increase and that we are now seeing more cases than ever before.

I have always looked on the disease as parasitic. Of course, in the present stage of our knowledge of the disease nothing can be said definitely in regard to this.

The result of treatment I do not lay any stress on because I have never treated it internally, my medication has always been external and the duration of the disease has always been possibly as it would have been without treatment.

As to the spot of origin, I always look for that, and in two cases recently have found it between the scrotum and the thigh. That is a location which is not usually mentioned.

Dr. L. Duncan Bulkley, New York—I was surprised at Dr. Weiss' mention of the frequency of this disease; it seemed to me greater than I have observed, although I see cases of it all the time. I think it most absurd that Hebra should ever have called it a diffuse ringworm. It is the most stupid thing we ever had from the Vienna School, and beyond question it has caused confusion in the minds of some people. For two or three reasons I have always been led to regard pityriasis rosea as a microbic disease. In nine cases out of ten the development is from above downward, commencing on the shoulders or neck and developing down rather than upward, which is the history of most parasitic diseases. The ringworm-like spread of the eruption has always seemed to me distinctly indicative of a parasitic element, although we have never yet identified any microbe or produced it by inoculation.

One gentleman has spoken of the treatment. I think it disappears with the use of bichlorid. No eruption of urticaria will disappear as a case of pityriasis rosea disappears under the proper use of bichlorid of mercury. I have never found constitutional treatment do any good.

Dr. A. W. Brayton, Indianapolis—I can recall on my fingers the cases I have seen. I have been inclined to look on it as a cutaneous expression of an infective disease like scarlet fever or other members of the cutaneous exanthemata. I recall a girl of 20, in excellent health, the first case I ever saw; the others occurred in a group, one might say. I saw no more cases until within two years. I recall a healthy man of 35 or 40, next a young physician of 26 or 27, an optician of 50 years, and a healthy woman with a child five or six months old, which she was nursing. Three of these cases were promptly diagnosed as syphilitic eruptions. None of the persons was sick. I have seen six cases in my practice in Indianapolis in the last ten years, and all have been well marked, and there has been no difficulty in the diagnosis. In only one case did I determine the antecedent primitive patch on the trunk. The cases occurred in married people; there was appearance of the disease in the husband or wife of those affected.

Dr. M. L. Heidingsfeld, Cincinnati—I am very much interested in this exhaustive and well-prepared paper, as well as the investigations of Löwenbach and a few of the other authorities mentioned. I have always felt a little skeptical in regard to the finer shades of differences which Löwenbach and others have attempted to draw between herpes tonsurans maculosus et squamosus, and pityriasis rosea. I have endeavored to confirm for my own personal satisfaction, from carefully selected cases, the pathologic differences, but have failed to note the distinguishing characteristics. I must also beg to differ with the essayist on purely clinical grounds, that pityriasis rosea has an internal pathogenesis. The fact that a fungus can not be detected in the scales under the microscope, means practically nothing. Cases of unquestioned herpes tonsurans frequently fail to show fungi. In selected cases, you may even start a dermatosis with a fungous inoculation, and though the dermatosis may continue to spread, the fungus may soon disappear, so that its presence can no longer be detected. Not only the action of the parasiticides, but also its usual origin and spread from a single patch, besides a mass of other clinical data, speaks strongly for its external nature and extraneous origin. I believe the burden of proof is strongly in favor of its external origin, and in the effort to establish an internal cause, if we invoke to our aid the sympathetic and vasomotoric systems, we are casting aside very plain and almost definite evidence for theories that are, I believe, at best, vague, indefinite, illusory.

Dr. John A. Fordyce, New York—Dr. Weiss quotes me as favoring the parasitic origin of this disease. I made a statement some time ago in the Dermatologic Society to that effect, based on an observation of two cases in one family, two sisters who occupied the same room, and, I think, the same bed. That is the only instance I have had in which I could find evidence of contagion. I have observed in the last two months two cases of pityriasis rosea with atypical distribution where the lesions were chiefly on the extremities, the trunk being only slightly involved.

Dr. Ludwig Weiss, New York—I know there is a difference of opinion as to the pathogenic origin of this disease. Is it not strange that with our well-developed methods of investigation, finding bacilli everywhere, in this disease we are not able to find anything outside of the micrococci of the skin? Why can not we find the causative microbe in the scrapings? Why can not we find it in excisions and staining? The eruption appearing in families seemingly points toward its contagiousness. I have extensively dwelt on this point. Our colleague, Dr. Zeisler, and Mrs. Zeisler had it ten years ago, and at that time Dr. Hyde and other gentlemen, in discussing these cases, said there was a question whether it was parasitic or not. It was not decided, but most of the gentlemen present said it was a disease *sui generis*. The evolution of the disease from above downward is not a criterion, I think, inasmuch as we have heard from Dr. Fordyce that it appears primarily on the thighs also. A parasitic disease will not come out from so many centers as pityriasis rosea does. You will see by the photographs that it develops over the whole body. In these lesions the borders are not raised, and you will not find any microbes in the scrapings. Why does the microbe, if present, disappear on the body, and why is it so tenacious when it appears on the scalp? It is strange that the same microbe should behave so differently in different parts of the body. As to general malaise and gastro-intestinal troubles, there is no doubt that they occur coincidently, and this shows it is some systemic disturbance that causes pityriasis rosea, and that it belongs to the erythematous diseases.

As to the differential diagnosis, Fournier himself confesses to having treated a case once, thinking it was syphilis. It is really no reproach for us to say that we are in doubt, although I do not think any dermatologist will have it, because outside of the general history of syphilis there is one pathognomonic symptom I would again like to emphasize. If you scratch with your finger nail a very recent lesion which appears red, you will, even on a perspiring skin, immediately elicit fine scales. This is a symptom you will not find in any other erythematous disease and never in the erythematous syphilid. We have tried it dozens of times, and it helped us in the diagnosis always.

The bichlorid solution does a great deal of good; it relieves congestion and causes exfoliation of the skin. From this circumstance I would not say that the eruption is necessarily parasitic. As it stands now I think the general opinion is against its parasitic nature. I think I was able to show in these micro-photographs that the disease commences in contradistinction to the parasitic affections in the lower strata of the skin.

INFLUENZA IN CHILDREN.*

WM. CARVER WILLIAMS, A.B., M.D.
CHICAGO.

It is the writer's conviction that influenza is a more malignant malady in children than is generally acknowledged (a conviction fortified by his own experience and further strengthened by material gathered among his friends and from the literature), which has led him to venture this paper.

Without being able to furnish much, if anything, that is new on the subject, it yet seems justifiable here to emphasize some of the manifestations and possible calamities which may be traced to this disease.

Influenza vera, when the victim is a child, differs from the same disease in adults in proportion to the difference in constitution, vital resistance and recuperative power. It should not be forgotten in this connection that the disease is of a markedly toxic nature. The admirable article in Ashby and Wright's work states, however, that children are less likely to have some of the ordinary symptoms, such as backache, rigors and pain in the limbs, and more likely to earache, glandular swellings and a cough resembling whooping cough. The latter is also mentioned by Forchheimer. Blackader likewise states that the invasion in children is more often insidious and slow than in adults. These statements seem to be borne out in our experience. The very multitude of its manifestations, with the ensuing difficulty in accurate diagnosis, has so confused our statistics on influenza as to render many of them misleading; yet we are probably in greater danger of under- than of over-estimating its gravity.

Washburn and Ayre report 12 cases of death from pneumonia in children, of which the autopsies showed the Canon-Pfeiffer bacillus present as the main factor in the disease in 8 of them, though previously unrecognized.

Dr. F. E. Wynekoop, of the Chicago Department of Health, in a personal interview, stated that of the 2,460 examinations made just previous to the interview of cultures from throats in cases of suspected diphtheria, 677 showed the Canon-Pfeiffer bacillus as the only pathogenic organism, while of these 677 cases, in 173 the diagnosis of diphtheria was definitely made from the clinical findings—yet the Klebs-Loeffler bacillus was not present.

Age appears to have no influence on the susceptibility of the individual, and, while very young infants are somewhat less frequently attacked, there is some question as to whether it may not be due to better protection rather than to natural immunity. In fact, there is nothing either in the literature nor in my own experience which warrants a belief in the existence of a complete natural immunity. The question of susceptibility would, therefore, appear to be one of the comparative degree to which different constitutions succumb to the disease—one child may have a so-called mild attack followed by recovery in a few days, while a brother or sister may be sick one or two months or longer. Much depends on the state of vital resistance of the victim, as in other diseases, but even more, in the writer's estimation, on the previous health of the mucous membranes. In a series of some fifty cases showing some of the more serious manifestations, he has rarely failed to obtain a definite history of indigestion, constipation, a common cold or some other previous disturbance of the mucous membranes.

Owing to the almost universal dissemination of the pathogenic organism during an epidemic, there is comparatively little possibility of accomplishing much in the way of prophylaxis at such times. And yet, because we know that the disease may be conveyed by contact, we should insist on such precaution as can be enforced to prevent this. Children should not be exposed to the contagion in the persons of other members of the family, nor sleep in illy ventilated rooms, nor breathe the vitiated air of public rooms and conveyances. Neither should they be allowed to risk contracting ordinary catarrhal "colds" from exposure. Mothers should be warned not to neglect attention to the children's bowels, and to allow them all the fresh air possible. Thus they may be enabled to resist and defeat an attack which might otherwise prove serious from this all too powerful enemy.

The division of the disease into various types for separate consideration is more or less arbitrary. The truth of the matter is, regardless of how the division is made, that every case one sees is of a mixed type. In other words, it is a case of influenza, and not of catarrh or neurasthenia—a specific infection, giving rise to various symptoms of which sometimes one, sometimes more than one, may be prominent, but of which a number are invariably present.

Those cases in which catarrh figures as the most conspicuous indication are perhaps more frequently met with. Starting with a rhinitis, or rhino-pharyngitis, the inflammation may spread either to the respiratory or alimentary tracts, or both. Wherever there is mucous membrane we may have this inflammatory reaction excited by the activity of the Canon-Pfeiffer bacillus. Thus we may find our little patients suffering from a rhinitis, a conjunctivitis, an otitis media, an inflammation of the accessory sinuses or of the pharynx, larynx, bronchi, lungs, stomach or bowels. The seat of choice for the severer forms of the infection is doubtless influenced greatly by the comparative resistance of the mucous membrane in various localities. The more nearly normal and healthy the membranes the fewer will be the grave manifestations of the disease. Hence the previously mentioned warnings in regard to the matter of prophylaxis.

The catarrhal manifestations of the disease appear, then, to be due mainly to the micro-organism itself. On the other hand, the nervous and circulatory and febrile types may be regarded as of toxic origin. The Canon-Pfeiffer bacillus, as in the case of that of Klebs-Loeffler, produces an exceedingly active and deadly toxin, capable not only of overpowering the vital organs, but of actually destroying their structure, to some extent, through degeneration. This being so, one can readily see how multiform in appearance and how serious in extent may be the history of such cases. One need not read far into the literature of the subject to find them, reported by careful observers, of meningitis, multiple neuritis, hemiplegia, neurasthenia and various mental disturbances—of endocarditis, pericarditis and myocarditis, arteritis, hemorrhagic nephritis and various other anomalies of the circulation with their consequences. Professor Monti of Vienna adds to these a glandular class, which includes those cases in which the lymphatic and other glands are chiefly involved, with a minimum of other clinical findings. I have included this class because I have known of several cases which would fall therein.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. H. M. McClanahan, A. C. Cotton and H. E. Tuley.

A form of the disease, until recently too little considered, is the chronic form, first described by Filatow. Cases have since been reported by Lord, Finkler, Wassermann, Ortner and others, where as high as 60 per cent. of cases having chronic cough, for instance, were caused by influenza bacillus, as proved by bacteriologic examination, in many instances it being found in pure culture.

Relapses and sequelæ during apparent convalescence are common, particularly the former. One can never be certain even when the child is to all appearances entirely restored to health that no sequels will follow. The writer has in two or three instances seen grave troubles develop days after recovery seemed complete.

The case reports which follow have been chosen without any attempt at covering the field. Aside from their individual interest, however, they indicate how widely divergent may be the chains of symptoms in disease traceable to the Canon-Pfeiffer bacillus, as well as the severity to which they not infrequently attain. It will be noticed that they are all more or less difficult to classify according to any of the rules laid down in different text-books.

Case 1.—Baby W., aged 5 months, was taken ill in February, 1900, with what seemed a mild attack of influenza. The attack was, however, followed in four or five days by a bronchopneumonia, which ran an apparently typical course. As convalescence from this occurred, it was noticed that the child refused all food and even water. Examination of the throat revealed a highly inflamed catarrhal pharynx and fauces. Bacteriologic examination showed the characteristic influenza bacillus in large numbers. The angina and attendant dysphagia continued, in spite of all local and constitutional treatment, for so long a time that the child was in apparent danger of immediate starvation. There was also a middle ear complication. The little patient gradually developed decided symptoms of rachitis, which persisted until she was taken into the country in June of the same year. She did not regain the normal strength of children of her age until after she was a year old.

Case 2.—M. C., aged 4 years, had a severe primary attack of influenza, verified by culture, in January, 1902, involving the middle ear and mastoid cells. The latter, however, never became suppurative and gradually responded to treatment—leeches, icebag, etc. Though the tympanic membrane was punctured three or four times, no pus was ever obtained. When the local trouble had subsided, the temperature still remained above normal, ranging mostly from 101 to 102.5, sometimes after exertion rising to even 104. A careful physical examination revealed a heart murmur, heard most plainly near the base and transferred most strongly toward the right. No other findings. This led to a diagnosis of post-influenzal endocarditis, and the child was kept in bed for three and a half months. During this time there was no appreciable improvement, the temperature curve and the heart murmur remaining about the same at the end as they were at the beginning of the confinement. About May 1 the little patient developed some indications of chorea, which yielded readily to treatment. She was allowed to get out of bed, was sent into the country and began to improve from that time on. The temperature gradually resumed its normal status and the murmur has been slowly diminishing ever since, till at the present time, something more than a year after its appearance, it is barely perceptible. She is in every other respect apparently strong and well.

Case 3.—Baby L., aged 8 months, taken ill during the month of January, 1900. Several other children in the family had been ill with undoubted influenza for several weeks. The little fellow became sick gradually. For several days a slight catarrhal condition of the mouth, eyes and nose had been present. Very soon he refused to eat and developed continuous fever, which was characterized by great severity. For days the temperature remained over 104, occasionally reaching 105.5 and even 106. His pulse was rapid, extremities were cold and blue, respirations were rapid and the patient showed some cyanosis. The most careful physical examination of the chest revealed only a few râles—indeed, the changes in the chest were insignificant as compared with the severe temperature range. The examination of the heart was negative. The abdomen at times was tympanitic. Food was taken in small quantities and only partly digested. The stools were thin, though diarrhea was not a marked symptom of the disorder. The ear was repeatedly examined by a competent otologist with negative findings. At another time the accessory sinuses, including the antrum of Highmore, were most carefully examined and no positive signs of disease found in these regions. After ten days of such alarming symptoms, the patient brightened, the temperature fell and he was undoubtedly on the mend. After several days of apparent improvement the patient again relapsed into the condition previously described. Two such relapses occurred. On each occasion alarming symptoms returned and it appeared that the resistance and the strength of so young an infant was hardly sufficient to withstand so severe an infection. After a course of several weeks, the patient recovered and very soon regained his strength.

The whole course of this infection was remarkable for the almost entire absence of symptoms save the hyperpyrexia and the great prostration. The catarrhal symptoms of the mouth, nose and pharynx were insignificant in comparison with the febrile condition of the child.

Case 4.—J. R., 8 months old, taken ill about Christmas, 1899, with an otitis. During January had an attack of influenza, with typical catarrhal symptoms, followed by a pneumonitis, during which there developed symptoms of meningitis, such as retraction of head, strabismus and twitching. At this time there was *nothing locally to indicate a connection between* the meningitis and the ear trouble, which appeared rather better than worse. During the pneumonia the temperature ranged from 102 to 105. A typical crisis occurred, and the temperature resumed normal, or nearly so. After a few weeks the contraction of the neck abated and there followed a paresis so that the child was unable to hold up its head. This condition lasted nearly six months. There was a similar condition in all of the voluntary muscles. Reflexes were diminished. The child was three and a half years old before being able to walk.

At present, 5 years old, though he seems bright and interested in his surroundings, taking part in the games of his playmates, he is unable to talk more than two or three words. He makes his wants known cleverly enough by signs.

I have purposely omitted all mention of treatment of influenza in children, for the simple reason that my study and experience has led me to the belief that there is no specific treatment for any of its forms. The treatment is purely rational and symptomatic, and the indications can only be met as they arise. As these are so numerous and varied an attempt to cover the subject would be obviously useless as well as practically without value.

CONCLUSIONS.

I feel justified, both from experience and from perusal of the literature, in drawing the following general conclusions:

1. Children of any age, even early infancy, are susceptible to the influenza infection.
2. Repeated relapses and grave sequelæ are frequent in cases where the initial seizure is mild as well as where it is severe. Therefore, no attack should ever be considered as "mild" nor as recovered from until a sufficient time has elapsed.
3. Clinical diagnosis should always be supported by the evidence of the microscope, whenever possible, as the practical certainty thus obtained may be of great value in explaining future developments.

I desire to acknowledge no small indebtedness to Drs. I. A. Abt, J. C. Cook, M. P. Hatfield and J. W. White for their kindness in furnishing clinical histories and other data toward the writing of this paper.

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DISCUSSION.

Dr. R. B. Gilbert, Louisville, Ky.—I regret that the essayist has not given us the treatment. I have been looking for some article on the management of the disease and its sequelæ. I hope some one will elaborate this part of the subject. The ravages of the disease in the young are, of course, much more rapid and severe than in the adult, and often influenza is not recognized until bronchopneumonia has developed and a fatal termination has occurred. I recall a case during the height of an epidemic of influenza in our city in which the mother gave birth to a child while still in the febrile stage. The child presented the same symptoms and died in a few days.

Dr. Charles G. Kerley, New York—I agree that the treatment is wholly symptomatic and I do not understand how there can be a distinct method of treatment because in different seasons and epidemics it attacks by preference different parts of the body.

Two years ago there was an intestinal type in New York City, characterized by a diarrhea bordering on the dysenteric type and associated with intense prostration. This year the complication which seemed to be particularly frequent has been involvement of the ear. I have had ten cases this year in private practice in which it was necessary to perform paracentesis, and this does not represent all of the cases in which there was ear involvement. It is evident that the treatment must vary greatly with the prevailing type. One symptom which is usually prominent is prostration. I have seen two children die from the grip simply from the intensity of the intoxication, for the autopsy failed to show any lesion to account for the death. Another prominent symptom is fever, a point which has been well brought out in the paper. I have seen cases in which the high temperature could not be accounted for even by the most careful clinical examination by anything else than the grip. I am inclined to think that some of the cases reported as typhoid fever in children were really instances of grip infection. Many of these cases of grip run along for two or three weeks with hardly any symptoms but fever and intestinal disturbance. All that we can do is to carefully feed these children, control any tendency to hyperpyrexia and employ general supporting measures.

Dr. P. J. Barcus, Crawfordsville, Ind.—It has been pointed out in recent years that when there is an epidemic of scarlet fever at the same time as an epidemic of the grip, because of some possible antagonism between the two diseases, the type of epidemic of scarlet fever is somewhat milder than usual. I have observed such conditions present during the last six months in our vicinity, but I am unable to state whether this explanation is the correct one. It would be interesting to know the real facts. The recent epidemic of grip with us has been milder than usual. I do not think it is possible to formulate any general plan of treatment; it must be symptomatic because of the great variations in the type of the disease. Coal-tar remedies and indeed anything which tends to create depression should be avoided.

Dr. H. M. McClanahan, Omaha—We have seen a great deal of the grip in our city during the past winter. Two symptoms, hyperpyrexia and extreme prostration, have impressed me as very important, and I frequently make the diagnosis on these symptoms. I have not had the opportunity of making the bacteriologic tests, and have, therefore, been compelled to depend on clinical examinations. I have noted that in these cases hydrotherapy has failed to control the fever as in other conditions producing high temperature. Another fact which has impressed me is the frequency of middle-ear trouble and mastoid abscess following the grip. The record of my cases shows that there are more cases of middle-ear disease from grip than from scarlet fever, and the same is true of mastoid abscess. I have adopted a treatment in a number of cases which is not at all new. It is simply the use of quinin bisulphate by suppository in doses of from six to twelve grains daily. It does not cause depression as do the coal-tar products. A few months ago I saw a case in consultation in which the attending physician was pushing phenacetin, although the child's finger nails were already blue. I remonstrated with him, insisting that such a line of treatment was very dangerous. I have seen recently a form of grip showing well-marked nervous symptoms.

Dr. Theodore J. Catlin, Delano, Minn.—I recall a case, seen last winter, occurring in a boy who suffered a relapse. The fever kept up a long time, and the diarrheal symptoms were marked. The family called in another physician in my absence, and he made a diagnosis of typhoid fever, stating that he made this diagnosis not only on the symptoms mentioned, but on the presence at that time of a distinct eruption. I have met with other cases having skin eruptions similar to scarlatina and some of a marbled appearance. I would be pleased to hear if others have met similar skin symptoms in influenza.

Dr. C. F. Wahrer, Fort Madison, Iowa—I should like to ask regarding a classification of the different forms of the grip, and also where is the anatomic seat of this disease. Some years ago, when it first appeared, it was thought that its anatomic seat was in the cerebrospinal system. We then met with the nervous and the catarrhal forms. The treatment is not satisfactory, but is symptomatic and purely empirical. If we knew the anatomic seat of this disease we might be able to suggest a more definite line of treatment.

Dr. John C. Cook, Chicago—In a hospital where I do the pediatric work I saw two babies die suddenly within forty-eight hours after birth, their mothers being ill with the grip. I have seen four cases of cerebral troubles this winter, all in consultation, in which the onset was as clearly that of grip as possible. In three of the cases at least one parent had the grip. A week from the time that one of the children had been seen by the attending physician I saw the case. The child was quiet and the only indication of meningeal trouble at the time was that one leg was a little stiff. Two days later the child had Cheyne-Stokes respiration, was rigid and presented the circulatory disturbances of the skin pointing to meningeal complication. Death occurred four days later. In another case, that of a baby nursing from a mother who was thought to have had the grip, the child had appeared stupid for four days before I saw it. Examination showed the pupils unequally dilated, and not responsive to light, the child totally blind. I was assured that the child had not been blind before this illness. It is still blind.

With regard to eruptions, influenza appeared in my neighborhood early in the autumn with an eruption, and the first two or three cases I saw presented an eruption closely resembling that of scarlet fever. As a rule, the throat symptoms were absent, as were also the rapid pulse and high temperature. In addition, all of the symptoms were those of grip. In the five or six cases which I allowed to mingle with the others in the family there was no spreading of the eruption to the other members, showing that the disease was not scarlet fever.

Dr. J. H. Hanna, Covington, Tenn.—I saw a case presenting an eruption which I thought to be that of scarlet fever. A few months later measles appeared in the family, and the child developed the same set of symptoms minus the eruption. There was every symptom of measles at the time except the eruption, and although I looked confidently for the measles eruption it did not come. After this had subsided another member of the family had measles. Three weeks ago the same symptoms developed and continued for several days, with all the symptoms of measles save the eruption. After the fourth day the measles eruption appeared and was well marked and typical.

DR. W. C. WILLIAMS, Chicago—I labored under a misapprehension when I prepared my paper, and consequently wrote so long a paper that it was necessary to omit many portions in the reading. This accounts for certain omissions to which reference has been made. There can be no question that the infection gains entrance through the mucous mmbranes just as in diphtheria. Some of the German investigators claim to have discovered the germ in the blood itself, and on the valves of the heart where there had been an endocarditis, but the evidence presented is not conclusive to my mind. I had an interesting series of four cases of eruption to report, in three of which the eruption closely resembled the rash of scarlatina. However, other children did not contract the disease. Along with this rash there were not the usual symptoms of scarlatina. All of these cases happened to be followed by an acute general adenitis, indicating that it was a sequence to whatever infection attacked the skin. With regard to treatment, I can only repeat what I said before, i. e., a bronchitis or an enteritis or other manifestation should be treated just as if there were no grip element. I would suggest the use of antiseptic douches to the mucous membranes, although admitting that the trial of this measure has not given encouraging results.

THE TREATMENT OF SCARLET FEVER, ITS COMPLICATIONS AND SEQUELÆ.*

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OMAHA.

It is difficult to discuss intelligibly the treatment of a disease having such wide variations in its clinical manifestations. In speaking of the cases, I shall use the designations: malignant, mild, severe and septic. Malignant cases are those overwhelmed by the poison and terminating fatally in one or two days. I shall say nothing of the treatment of this class. Mild cases are those presenting the characteristic symptoms without complications, the fever subsiding in from five to seven days. Severe cases are those having high temperature, profuse rash, often nervous symptoms, erythematous sore throat, but without membranous exudate. Septic cases are those presenting the symptoms of scarlet fever and, in addition, membranous exudate on the tonsils and other portions of the throat. These cases may or may not be severe at the inception. This is the class of cases in which we have the streptococci infection. These clinical divisions are simply made to indicate the kind of treatment more clearly. The subjects of quarantine, the isolation of the patient, the preparation of the room and the care necessary on the part of the attendants, while important, will not be considered in this paper. Certain general principles of treatment apply equally to all cases, and to these I shall first call your attention.

DIET.

To my mind the diet is exceedingly important and not rightly appreciated. For some years I have adopted the rule of keeping all patients on a liquid diet for not less than four weeks, the object being the prevention of renal complications. According to my observations, this sequela usually follows the mild cases. During the last year I have seen five cases of nephritis following the mild forms of scarlet fever. These cases were not under my care during the acute attack. On the other hand, I have not observed this in any case where the principles of treatment indicated were faithfully carried out. By a liquid diet I mean milk, properly modified to suit the age of the patient. Many cases can be continued on this simple diet. In others we may vary it by the use of thin broths and fruit juices. In young children it is possible to modify the milk to suit almost every case. I have seen but two exceptions; for these whey was substituted with satisfactory results. In all cases the patients should have an abundance of water. In order to encourage the taking of food I recommend the use of carbonated waters, weak lemonade, orangeade, etc. I wish to emphasize the point that this diet is to be continued the full four weeks and not the first or second week, as it usually recommended. The continuance of the liquid diet during the period of convalescence is, to my judgment, the key to the situation.

REST IN BED.

The second general principle of treatment is to require that the patient be kept in bed during the entire course of the disease. I am aware that this is exceedingly difficult in mild cases, but, in my judgment, these are just the cases requiring this extreme care. The patient out of bed by the end of the first week and having the freedom of the house is more likely to be exposed to changes of temperature, to draughts of air, etc.; the influence of this exposure on the cutaneous capillary circulation adds to the work required of the kidney, and increases the danger from this source. In the severe cases it is not difficult to keep the child in bed, and I have a conviction that this is one reason why fewer cases of nephritis follow this severe form of scarlet fever.

LOCAL AND OTHER MEASURES.

In the mild cases, diet and rest in bed constitute the most important part of treatment. A spray or gargle of some mild antiseptic should always be used. Dobell's solution, properly diluted, or Seiler's tablets, dissolved in water, usually meet the indication.

I have very little confidence in any local treatment preventing otitis media. In my observation this complication occurs as frequently in mild as in severe cases. The bowels should be moved freely at the beginning of the attack and as soon as vomiting has ceased some mild aperient should be given. The bowels should move regularly during the entire course of the disease. The initial vomiting seldom requires special treatment. In cases where this is an early symptom, all food should be withdrawn for twelve to twenty-four hours. A simple fever mixture of liq. ammon. acet., properly diluted, may be given for the first few days.

ANTIPYRESIS.

Severe cases require more active treatment. When the fever is 104 it should be controlled. I have no doubt that the nervous manifestations are due to high temperature, as well as to the infection. Among antipyretic remedies, hydrotherapy ranks first. It is not only generally most efficient but, more important, it is the safest. However, in private practice the prejudice of the laity frequently prevents its proper application. Sponging with cool water is sometimes sufficient. More efficient, however, is the application of a towel dipped out of warm water about the body of the child, then, over this, is applied several thicknesses of a towel, wet with cold water. Should these means prove inefficient, I next employ the cooled bath. An ordinary wash boiler, half full of warm water, is placed beside the bed. Over this a sheet is thrown. The child is immersed, the sheet preventing any undue shock and lessening the fear of the child. Gentle friction of the body is now employed, then an attendant adds a quart of cold water and removes a quart of the warm water. This process is continued until the temperature of the water is reduced from 100 to 70, in the course of a few moments. The child may remain in this bath from eight to fifteen minutes. The body is then wiped dry and the child placed in bed. Among antipyretics, I prefer sodium salicylate; two or three grains may be given every hour. This will usually moisten the skin and lower the temperature.

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SEDATION.

In some cases extreme restlessness, especially during the first two or three days, require attention. I think it wiser to relieve this symptom than to permit the child to waste its energy by tossing about. To meet this indication I prefer chloral hydrate; two grains every two hours for four or five doses will usually insure quiet sleep. If the heart's action is rapid or weak this remedy may be guarded by the addition of digitalis, one to three drops of the fluid extract being given with each dose of the chloral. If, in addition to the restlessness, there are nervous symptoms, as rolling of the head, oscillation of the eyeball, indicating a disturbance of the high nerve centers, applications of the cold compress to the head are indicated. If the ice cap is not accessible, I use the ice poultice. This is made by spreading dry flaxseed meal over a piece of cloth large enough to cover the head, then distributing over this cracked ice and covering all with a piece of gauze.

TREATMENT OF THE THROAT.

In the septic cases there is a membranous inflammation of the throat and nasopharynx, with increased action of the muciparous glands. These mucous membranes present a large absorbent surface richly supplied with lymphatics, and in these cases we have enlargements of the surface of the gland, continued fever and a general infection. In these cases treatment of the throat and the nasopharynx is extremely important. In my experience there is no treatment so efficacious as irrigation of these parts with a warm salt solution. This is to be accomplished by means of the fountain syringe. It is usually better to wrap the child in a sheet so that it will be completely under the control of the attendant. I personally supervise this treatment, at least for the first time. The mouth and throat are first to be irrigated; when irrigating through the nose the mouth must be kept open. It is my opinion that fluid is not driven in the eustachian tube unless the patient attempts to swallow during the treatment. If the jaws are kept separate deglutition can not take place. The amount of purulent material that is washed away in some of these cases in a single treatment is remarkable. These treatments are to be repeated according to the exigencies of the case; two or three in twenty-four hours, for two or three days, are usually sufficient. I have seen the temperature drop two or three degrees after this treatment. In cases where the discharge from the throat and nose is fetid, the use of permanganate of potassium, five grains to the pint, is of benefit.

In the septic cases, stimulants are always indicated and should be given frequently and at regular intervals. The condition of the heart should be our guide in the use of strychnin or other cardiac stimulants.

CARE OF THE SKIN.

The skin should be carefully treated in all cases. The use of oily applications is of benefit in hastening desquamation and in preventing the infection of the room. In some cases itching is a symptom so annoying as to require attention. For the relief of this symptom my patients have received the greatest benefit from a 1 per cent. solution of carbolic acid. If this fails then the lead water solution liq. plumbi acet., 1 gram to the pint, may be employed. When the fever has subsided the patients should receive a daily bath with soap and water in order to remove the dead epithelium. This treatment is to be continued until desquamation is complete.

GLANDULAR INVOLVEMENT.

Inflammation of the cervical glands occurs in all septic cases. There is little to be gained by treatment except to add to the comfort of the patient. I am in the habit of using the belladonna salve and sometimes over this the ice poultice. Suppuration of these glands occasionally takes place and adds greatly to the gravity of the case. Treatment is surgical. Cellulitis is a serious but rare complication. I have met with but two cases. It is usual to make several incisions in order to promote drainage.

JOINT AND HEART COMPLICATIONS.

Scarlatinal arthritis is usually manifested in older children and young adults. In my experience the wrist and elbow joints have usually been involved. I have seen two cases of suppurating arthritis, one of them terminating fatally as a result of the general infection. The affected joints are usually very painful. The treatment I have found most satisfactory is the application to the joint of a salve composed as follows, sodium salicylate 1 dram, lanolin 4 drams, simple ointment 4 drams. This is thoroughly applied to the joint; which is covered by a layer of cotton batting, held in place by a roller bandage.

The heart should be carefully watched in all cases of scarlet fever. The possibility of inflammatory lesions, both endocardial and pericardial, should be recognized. I have recently lost a case from heart failure at the end of the second week. A rapid pulse, after the subsidence of the fever, or a weak second sound, should place us on our guard.

AURAL PROPHYLAXIS.

The treatment of otitis media is more important than many seem to think. Involvement of the middle ear is due to extension of inflammation along the eustachian tube. It is usually purulent, and when so the pus finds an exit through the external meatus, because of rupture of the membrana tympanum. The symptoms of the middle ear trouble are often vague. If old enough the child may complain of pain or it will be noticed to pull at the ear. Sometimes, however, the first evidence of ear trouble will be the appearance of pus in the external canal. The operation of paracentesis, while theoretically correct, is seldom employed in private practice. A careful examination of the ear should be made in all cases of scarlet fever. When the membrane has been punctured or when it has ruptured, prompt treatment should be instituted. I have for a number of years adopted the following plan of treatment. The attendant is provided with two medicine droppers, a warm boracic acid solution is prepared, the child is placed on its side with the affected ear uppermost. The dropper is filled with the solution which is gently instilled into the ear. The attendant takes the second dropper and, by compressing the bulb, withdraws the fluid from the ear. This is repeated frequently and until the canal is free from pus. Then the ear is filled with a 50 per cent. solution of peroxid of hydrogen to which a little bicarbonate of soda has been added. This is again washed out by the boracic acid solution, and the canal gently dried with absorbent cotton. This treatment is repeated from two to four hours and continued from day to day until the discharge ceases. Involvement of the mastoid cells has not been frequent in my cases of scarlet fever. When it does occur, prompt incision with drainage is indicated.

Scarlatinal nephritis is the most important sequela of scarlet fever. In all cases frequent examination of the urine should be made. We can usually have warning of impending danger. The earliest symptoms of the nephritis are swelling beneath the eyes or on the dorsum of the foot, with a lessened quantity of urine. The treatment of this sequela in the early stage and its prompt recognition are important. The important points of treatment are rest in bed, a liquid diet and the avoidance of stimulating diuretics and the increasing of the function of the skin and bowels.

In cases seen early, these principles of treatment are usually sufficient.

DISCUSSION.

Dr. R. B. Gilbert, Louisville, Ky.—This is certainly a very important subject, for the successful management of scarlet fever is a great desideratum. It is well known that many of these cases are not brought to a successful issue. I agree with most of the statements made in the paper. One treatment not referred to was popularized some time ago and advocated by the late Dr. J. Lewis Smith, the idea being that scarlet fever tended directly toward death from the onset, and that, therefore, from the first the treatment should be supporting. He often began the treatment by giving the ammoniocitrate of iron. It has been my own custom to use this remedy in these cases regardless of what other conditions might arise. I believe many cases are benefited by it, and that the method is superior to the plan of waiting until the patient has already become anemic. Mild diuretics are also indicated, though, of course, we should employ no highly stimulating diuretic. Mild carbonated waters should be given in abundance, and by such free elimination we should seek to minimize the danger of nephritis. I am not thoroughly in accord with the use of so many baths. It is difficult to carry out in private practice, and in a few instances in which I have insisted on such baths and the patients have died I have been accused of contributing to their death. A great deal can be done toward the successful management of scarlet fever by inunctions, and I know of nothing better than lard, which is cheap and always at hand. It may possibly be made a little more efficacious by the addition of carbolic acid, although it is chiefly of use in controlling the itching. I have often seen cases of scarlet fever at the beginning of the desquamation in which the temperature of the patient was reduced two degrees by a thorough inunction. Only two years ago I was asked to take charge of a case that had been under the care of an intelligent homeopathic practitioner of my city. His medicines had exerted no controlling effect on the fever, and as exfoliation had already begun and the chief symptoms were the high temperature and the intense itching, I recommended a general inunction with lard. After waiting thirty-five minutes we found that the boy was so comfortable that he was dozing, though sufficiently awake to say to me: "Doctor, please do that again, it makes me feel so good." I do not think there is any need for any heroic treatment of the temperature unless the maximum daily temperature exceeds 102 F. When it does go beyond this point I make use of sodium salicylate made from the natural source.

Dr. G. A. Hermann, Hamilton, O.—I wish to refer to a case in which a boy was doing so well that I discharged him as cured. I was greatly surprised in a few days when the father told me the child was dead. On inquiry I found that the boy had passed very little urine for the last twenty-four hours. Death had evidently resulted from nephritis. In another case in which I neglected the kidneys I had much trouble with the child for two years, trying to restore the general health. Since these experiences I have been most careful to attend to the functional activity of the kidneys.

Dr. J. H. Hanna, Covington, Tenn.—I recall the case of a child of about 6 years of age, who fell and bent her arm. I put it in a splint and kept it there for four weeks, after which the arm was straight and apparently in excellent condition. About four weeks later the child fell again and bent the same arm in an opposite direction. The arm could then be straightened just as one would a green stick. It was kept in a splint for three or four weeks. Once more the child fell with the splint, and succeeded this time in bending the arm in the opposite direction again. It seemed to me that in that case there was a deficiency of lime which caused this bending of the bone. There had been some little trouble with the kidneys. After this the arm did well. With regard to inunctions, I think vaselin is one of the best remedies for this purpose, and I am of the opinion that it prevents the spread of the disease by preventing the dissemination of the desquamated epithelium. If carbolic acid is simply stirred into the vaselin to make a 10 per cent. ointment, it will be found that the mixture is very unevenly made, and this may cause serious trouble.

Dr. Charles G. Kerley, New York—I support the reader of the paper in everything he has said. I would like to keep my scarlet fever patients in bed at least four weeks. I am also in favor of cold applications when the fever needs attention. Mothers must be taught that there is no danger in such applications in any of the exanthema. The idea that the disease will "strike in" is an old and exploded fallacy. I do not approve of a fountain syringe for nasal irrigation, preferring to use instillations by means of a teaspoon, or some similar method. I am not particularly fond of carbolic acid in oily mixtures for the skin dressings, being rather afraid of absorption. I much prefer some simple inunction, such as vaselin, and think it answers every purpose.

According to my observation, very few cases of scarlet fever die from scarlatina poisoning, but usually through some of the complications. The parts which must be watched particularly are the ears, the heart, kidneys and the lungs. I have seen a few cases of endocarditis develop in connection with scarlet fever. It is very necessary to examine the urine at least every other day.

I am glad attention was called to the fact that there may be a suppurative otitis entirely unassociated with pain. I have been called in consultation not a few times because there was a high temperature which could not be accounted for. On looking into the ear the cause of the fever was found in an otitis which had not made itself known by the presence of pain.

Dr. B. R. Shurly, Detroit—There is one phase of the treatment of scarlet fever to which I desire to refer, i. e., the administration of antistreptococcus serum. I have had but two malignant cases during the past year, which have given me an opportunity to use this serum, and, unfortunately, in both instances the serum was not administered until late in the disease. There was a fatal result in both cases. I should like to hear further reports of the results from this treatment. It seems to me that the key to the whole situation is to be found in the throat; the complications of otitis media, endocarditis and kidney trouble are simply due to absorption from the pathologic state of the nasopharynx. This emphasizes the importance of thorough irrigation of the nose and throat in the various stages of this disease.

Dr. E. T. Shelly, Atchison, Kas.—I wish to inquire with regard to the use of diphtheritic antitoxin in scarlet fever. I think Dr. Holt has recommended that children in institutions suffering from any of the exanthemata and having suspicious throats should be given diphtheria antitoxin.

Dr. John M. Dodson, Chicago—With regard to the use of antistreptococcus serum, I should like to say that Dr. Class of Chicago, whom I know to be an earnest and enthusiastic worker, believed a few years ago that there had been discovered in a certain diplococcus the specific cause of scarlet fever. He was at that time connected with the health department of Chicago. At the meeting last year rather positive statements were made with reference to this organism as the causal factor, and it was pronounced to be unquestionably the cause of scarlet fever. I feel very sure that that statement was made on insufficient grounds. In the laboratories of Rush Medical College a very thorough study of the organisms found in the throat and blood of scarlet fever patients has been made during the past year, and it has been determined that the organism I have already referred to is not a specific organism, and can not be identified as a definite micro-organism to accord with the statements made by Dr. Class. At one time it was thought that garden earth was a very necessary culture medium, but it was soon discovered that the organism would grow on a great many media, and that the organism itself was not uniform in its morphologic or cultural characteristics. I may add that streptococci are not always present in scarlet fever, although they are present in the majority of severe cases, and many of the phenomena of scarlet fever are traceable to streptococcus secondary infection. I think it is likely that some other organism not yet discovered, possibly a protozoön, is the cause of scarlet fever. Herein lies the difficulty of using the antistreptococcus serum. Another difficulty is that there is a large number of varieties of streptococci, and each variety requires a serum produced by that particular variety to successfully antagonize it. This seems to be an insuperable obstacle in practice. When streptococcus infection arises we are compelled to use whatever antistreptococcus serum is available, and it is more than probable that it will be from an entirely different variety of streptococcus, and be, consequently, wholly ineffective. The practice in Chicago seems to be to determine, if possible, the nature of the membranous angina before resorting to the use of diphtheria antitoxin. In the majority of cases the sore throat of scarlet fever is not due to the diphtheria bacillus, although this organism is sometimes present.

Dr. A. G. Person, Snyder, Texas—I have had one case recently which seems to me to clearly sustain the recommendation of the essayist in favor of a milk or liquid diet. The first case in the epidemic occurred in a girl of 15. I recommended that she be kept in bed on a milk diet. She recovered rapidly, and as her appetite improved she insisted on a mixed diet. Her father wrote me, while in New Orleans attending the Polyclinic, that she had a relapse and a very severe kidney complication. Six other children have all passed safely through the disease, as they could be more easily controlled.

Dr. Orville A. Kennedy, Louisville, Ky.—I desire to emphasize the importance of watching all through the course of the disease for complications and of guarding against the spread of the disease. To prevent ear and throat complications keep the nasopharynx thoroughly cleansed. To prevent kidney complications, a liquid diet is most important. To prevent the spread of the disease inunctions are very useful. For this purpose I use, and find it very effective, not only to prevent the spread of the scales, but to allay the itching, a solution of thymol and eucalyptol in olive oil. The patient should be thoroughly anointed with this two or three times a day.

Dr. H. M. McClanahan, Omaha—In the case of scarlatinal nephritis, occurring about the third or fourth week, I question the wisdom of giving any diuretic at that time, as I consider it better to give the kidneys physiologic rest by stimulating the activity of the skin and bowels. As to the use of cool baths, it does seem to me that when we are convinced of the efficacy and virtue of a treatment it is our duty to educate the public as to its importance. A number of years ago I encountered a prejudice against baths and declined to treat certain cases because the parents would not allow me to exercise my own sincere judgment. With regard to inunctions in private practice, I would say that I make use of a mixture made by taking four tablespoonfuls of lard, placing this quantity in a cup and heating it in hot water for half an hour, and then adding a cake of white wax and a teaspoonful of the oil of eucalyptus. This makes an elegant and thoroughly sterile preparation. In my practice it is extremely rare to have a pulmonary complication in case of scarlet fever, and I presume it is more common along the coast. I am glad the fact has been emphasized that an otitis not infrequently develops in scarlet fever without any pain. I think it is the duty of the physician in this disease to examine the ears with a mirror at intervals of two or three days. I do not feel that I can speak with authority on the use of antistreptococcus serum. I have used it on the theory that the complications of scarlet fever are generally due to some variety of streptococcus, and this view has been borne out by the excellent article recently published by Hektoen. I have always understood that the membranous sore throat of scarlet fever is not, as a rule, due to the Kelbs-Loeffler bacillus, and hence it does not seem to me wise to give the antidiphtheritic serum in those cases. Again, I have never yet seen a case of laryngeal stenosis complicating the membranous sore throat of scarlet fever.

TETANUS PROPHYLAXIS AND SUSPECTED WOUNDS.

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PHILADELPHIA.

In 1899, in association with E. M. Ranck, I published a paper in the *Journal of Comparative Medicine and Veterinary Archives* entitled "Tetanus Toxin and Antitoxin." In addition to general facts regarding tetanus, the tetanus bacillus and the toxin and antitoxin, there were recorded some practical experiences with the antitoxin as a prophylactic, which, probably because of the nature of the rest of the paper, escaped the attention they deserved.

The observations to which I again call attention were made in one of the large antitoxin factories of this country on a number of horses somewhat exceeding 800, and continuing over a period of nearly four years. These 800 horses were used for immunization experiments in manufacturing different therapeutic serums, and were constantly being injected and bled at frequent intervals, and occasionally suffered from local lesions consequent upon the irritative action of the injected toxins.

At the time the laboratory and stables were in an old building, which, though it was kept very clean and occasionally disinfected, seemed to be badly infected with tetanus. Our first attempts at stamping out the disease were by thoroughly cleansing and disinfecting the stables, and washing the horses with disinfecting solutions, as well as by exercising every precaution to prevent the dissemination of dust.

In spite of these precautions, the death rate from tetanus sometimes rose so high as to make us seriously consider abandoning the quarters, or temporarily suspending business. The highest death rate was in 1898, when it reached 10 per cent., and it was not until we had had this experience that I instituted the regular and systematic immunization with antitetanic serum, as a means of preventing the disease, and every horse was immunized every three months. The periodical treatment consisted of an injection of from 10 to 25 c.c. of a low grade of antitetanic serum, the injection being repeated in about ten days. The effect was immediate and striking, and taking the result by years, we find the following: 1897, no precautions taken to prevent tetanus, death rate 8 per cent.; 1898, no precautions taken until late in the year, and then antitetanic serum used unsystematically and in insufficient doses, death rate 10 per cent.; 1899, systematic immunization of every horse, carried out as described, death rate from tetanus, 1 per cent.; 1900, systematic immunization of every horse continued, death rate less than 1 per cent.

These observations show the thoroughly reliable result to be obtained by the proper and systematic employment of antitetanic serum as a prophylactic. Such employment does not apply to antitoxin factories only, but has a far-reaching application in all departments of human and veterinary medicine. We averaged 200 horses a year in the stables mentioned. In two years the deaths from tetanus numbered 36, in the next two years about 4. We, therefore, saved the lives of 32 horses by this prophylactic treatment.

Every day there apply for treatment in the dispensaries of our large cities patients suffering from lacerated and punctured wounds of the hands and feet that are suspicious in character, and concerning which one is in doubt whether tetanus may not develop. In spite of the ordinary antiseptic treatment, in many of these cases tetanus does develop, and many of the patients die.

Those familiar with the treatment of tetanus by any of the methods yet suggested (including that with antitoxin) are quite familiar with the fact that after tetanus once develops, the probability of curing the patient is very slight.

The practical conclusion that must be drawn from the observations on the antitoxin horses seems to me inevitable: that in all suspicious wounds, that is, all wounds at all likely to be followed by tetanus, the antitoxin should be administered as a prophylactic. This I have urged repeatedly in other writings, and have taught my pupils from year to year, but there are objections that have some slight weight. The antitetanic serum is expensive, does not keep indefinitely, and must be administered by subcutaneous injection, which alarms and pains the patient. In many cases, therefore, dispensaries and practicing physicians are unable to provide and employ the serum, a matter of economy and penury which undoubtedly costs life.

I was very much interested during December, 1902, by a description given me by Dr. Damaso Rivas, who, returning from the laboratory of Professor Calmette at Lille, related to me some experiments that he had seen conducted there, and in which he had participated, which showed that antitetanic serum, while not absorbed from the skin or mucous membranes, is readily absorbed by denuded surfaces, and when the dry serum is dusted on wounds it is readily absorbed, and confers immunity on animals. I at once recognized the practical importance of this observation, and conducted a series of experiments to show how useful dry antitetanic serum as a dusting powder might be. It did not take many experiments to prove the correctness of Professor Calmette's observation.

Experiment 1.—Sixteen adult guinea-pigs were employed. The abdomen of each was shaved, and with a sharp scalpel the skin was cross-hatched, as in performing the operation of vaccination, and an area of about 1 cm. in diameter was abraded. With a platinum loop a drop of a pure culture of the tetanus bacillus was thoroughly rubbed into the abraded surface, and in one-half of the animals the seat of operation was dressed with cotton saturated with collodium; in the other half the abraded surface was thickly sprinkled with pulverized antitetanic serum, and then similarly dressed with collodium. The results were striking. Every animal of the first series died with typical tetanic convulsions, while every one of the second series lived and showed no symptoms.

In order to compare the effects of mixed infection, I performed the following experiment:

Experiment 2.—Eight adult guinea-pigs were prepared by shaving the abdomen and cross-hatching the surface, as described. Each was now infected with a suspension of garden earth, which was rubbed into the injured surface. In four cases the surface was dressed with collodium; in the remaining four, thickly sprinkled with the antitetanic powder and then dressed with cotton and the collodium. These animals all recovered, there evidently being no tetanus bacilli in the garden earth employed.

It then occurred to me that if an active but harmless antiseptic could be combined with the antitetanic powder the powder might be doubly useful; first, in preventing tetanus; second, in inhibiting the growth of other micro-organisms. As best adapted for this purpose, I selected chloretone, which is both analgesic and antiseptic, and performed the following experiment:

Experiment 3.—Eight guinea-pigs prepared as already described were infected with pure cultures of the tetanus bacillus. In four the wound was simply dressed with cotton and collodium; in the remaining four, thickly sprinkled with the dusting powder, consisting of antitetanic powder and chloretone, then covered with cotton and collodium. The unprotected animals died in two days with typical tetanic convulsions. Of the remaining animals, one died on the sixth day of tetanus.

This showed that the combination of equal parts of chloretone and antitetanic powder had too greatly diluted the antitetanic powder, and made it less useful than when the purer dried serum was used. It was suggested that chloretone, which is cheaper, might suffice, and that if wounds were dusted with it, an antitetanic serum would be unnecessary. So another series of experiments was undertaken.

Experiment 4.—Eight guinea-pigs were employed, all prepared and infected with the tetanus cultures, as usual, and in one-half the wound was thickly sprinkled with chloretone, then dressed with cotton and collodium. All of these animals died of tetanus.

I was loath to publish the results of these experiments until I had learned what Professor Calmette intended to do with the observations he had already made, and accordingly corresponded with him, telling him of my experiments, and of the important bearing I thought they had upon the prophylactic treatment of possibly infected wounds. He answered that within a day or two from the time he wrote me, he was expecting shortly to make a communication on the subject, and a later mail brought me a pamphlet containing his communication made to the Academy of Science at Paris, May 11, 1903, in which his own and Dr. Rivas' experiments are given, and in which the results of the experiments performed in his laboratory and in my laboratory are shown to be uniform.

The advantages of this method of treatment are many. The dry antitetanic serum preserves its activity indefinitely. It requires no instrumental administration, etc., but can be conveniently sprinkled, from the bottle in which it is dispensed, on the wound after the surface has been thoroughly cleansed and prepared to receive it. It is devoid of irritating properties, slowly dissolves and is absorbed, and when thus applied has the double advantage of neutralizing the toxin of the tetanus bacillus as it is elaborated in the wound, and of being absorbed into the patient's blood, where it remains to neutralize any toxin subsequently formed and absorbed.

I feel that these experiments of Professor Calmette and myself should have a most important bearing on dispensary practice, and that particularly in those districts of our country where tetanus is known to be frequent, the powder should be systematically employed for dressing of wounds, and in lieu of the observations to which attention is directed in the opening of this communication, I would recommend a very wide application of the antitetanic serum for prophylaxis against tetanus in both human and veterinary practice.

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SPRING WATER AND TYPHOID FEVER.

The firmly rooted popular belief in the superior excellence of ground water, and especially of spring water, is not difficult to understand. The usual clearness and brilliancy of such waters, together with their coolness, render them highly attractive to the eye and pleasing to the taste. In times of typhoid epidemics "pure spring water" is a shibboleth of undoubted commercial value. A strong and wholly natural preference for ground water as a source of town supply has been evinced on many occasions. The citizens of Ithaca, after becoming fully aware of the origin of the late typhoid epidemic, could not express too deeply their abhorrence of surface water. In France for many years *les eaux des sources* have held the highest position in the estimation of most municipal authorities, and in that country spring waters have been widely accepted as the most desirable source of municipal supply.

The last decade, however, has seen a profound change in the position accorded by sanitarians to spring waters. From many quarters evidence has accumulated that the delectable appearance of spring water too often masks a treacherous nature. Gärtner,[1] in a recent monograph on this subject, has brought together a formidable array of outbreaks of typhoid fever attributed with greater or less certainty to spring water. He clearly shows that in many instances the trusted spring water is nothing but unfiltered surface water of dubious antecedents. In chalk and limestone regions especially, where the existence of extensive subterranean channels and crevices renders it exceedingly difficult to determine the sources from which a spring is fed, the danger of surface contamination is ever present. The calamitous typhoid epidemic at Worthing, England, in 1893, will at once occur to the student of epidemiology as a case where the fissures in chalk were responsible for an unusually extensive outbreak of disease. In some regions small brooks or rivers which are known to receive sewage pollution may disappear wholly or in part in openings in their beds, only to emerge at a remote point as gushing and copious "springs" which confiding inhabitants will make use of for drinking purposes with a calm assurance of safety which would indeed be ludicrous if it did not so often lead to appalling consequences. The changeable character of spring water, both as regards turbidity and bacterial content, its dependence upon the amount of rainfall, upon the topography of the country and the underlying geological strata, and above all, the often insuperable difficulty of learning the real origin of the water, are not features that increase its desirability as a source of supply. Gärtner points out that geologists are largely responsible for the growth of the modern views regarding the uncertain character of spring water, and quotes with unqualified approval a statement by the geologist, Heim, that he would drink the filtered water of Lake Zurich with a feeling of greater security than the water from the majority of springs with which he was acquainted. "Springs are changeable; to-day good, tomorrow, perhaps, unsafe."

If a widespread reaction has already set in against the indiscriminate use of ground waters it is amply justified. There have been several noteworthy illustrations of the unsafe character of spring water in the hygienic annals of recent years. The water supply of Paris, which is perhaps the most extensive modern system of municipal spring water supply, was for a time highly vaunted as an example of a naturally pure water, as compared with the "merely purified" water of Berlin and other European capitals. Pure spring water was eloquently contrasted with filtered surface water; innocence was said to be better than repentance. It was not long after its introduction, however, before the Paris supply fell under a cloud. The epidemics of typhoid fever in 1894 and 1899, and the searching investigations to which they gave rise, have shown unmistakably that the spring water from the region of the Vanne is not only not beyond suspicion, but that it is actually responsible for an excessive amount of typhoid fever in Paris. The facts brought to light by these and similar inquiries have caused a decided change in the opinion of French sanitarians regarding the character of spring water, and recent utterances by Brouardel and others indicate that in France spring water has had its day as the ideal for a supply.

In addition to the epidemiologic evidence, recent bacteriologic investigation has also cast doubt on the universally wholesome character of waters of this class. Horton[2] has reported finding the colon bacillus in water from a number of springs and driven wells, and concludes as the result of his investigations that the fact that water is derived from a drilled well can in no wise be taken as a guarantee of its potability.

We can no longer hesitate to admit the fact that many spring and ground waters are nothing but insufficiently filtered surface waters which may, indeed, have traversed long distances underground, but which have met in their course no layer of soil or sand of purifying power. To continue to place implicit trust in waters of this sort is to tempt further "accidents" of a kind with which medical literature already teems.

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[1] Klinisches Jahrbuch, ix, 1902.

[2] Journal of Hygiene, vol. iii, 1903, p. 155.

FAT BABIES AND HEALTH.

In a recent issue an English contemporary[1] calls attention to the mischief which is being done by the present standard that is accepted as regards healthy babies. As this paper well says, at baby shows the prize is practically always given to the fattest baby. There is a tradition current among mothers, as far as the memory of man runneth, that fat babies are just the pink of perfection. The surest index of this is that all manufacturers of artificial infant foods advertise their wondrous virtues by photographs of thoroughly rounded, and at times positively obese dumplings of babies. Mothers are very proud of their young hopefuls if they are a mass of curves and dimples with deep folds at all the joints and cushions of fat that conceal their anatomy so effectively as to make them formless little masses of humanity. They have been encouraged in this idea by the mistake of some of the classic painters who have pictured babies of this kind as if they were models of all that is finest in babyhood.

Fatness is said to be a distinctive quality of superlative beauty in the harems of the East, but there is no need to appeal to the antifat-cure crowded advertising columns of our magazines to prove that this standard is not generally accepted among the occidentals. Fatness is no more truly beautiful in a baby than in an adult. Opposed to the traditions that fat babies are healthy is the generally accepted medical opinion that, on the contrary, very fat infants are especially prone to succumb to certain diseases. Very few physicians dare to give a good prognosis when their child patient is very fat. This is not surprising since the blanket of fat in which all the child's organs are wrapped absorbs all the heat manufactured during the course of a fever, and makes antipyretic measures very difficult of application. Besides, the presence of fat seems of itself to be a distinct hindrance to the exercise of organic function with consequent lowering of vital resistance. Whether fat babies are more liable to infection than others is not definitely decided, but it is well known that they are at least as prone to the minor infections, such as colds, and to the so-called ordinary diseases of childhood, as are much thinner babies.

It seems worth while to call attention to this subject just at this time because it is during the warm weather that fat babies are distinctly at a physical disadvantage. They swelter and chafe, and, as can readily be understood, are much more uncomfortable than are their thin fellows of the same age. They lose sleep easily, and are thus predisposed to nervous complications in any serious illness. Yet all the winter months before the dreaded second summer fond, anxious mothers have been mainly engaged in securing the accumulation of as much fat as possible on baby under the mistaken notion that this means good health.

There is no doubt that some of the responsibility for the persistence of the erroneous idea of the correlation of fat and health in infants must accrue to physicians who have either encouraged or at least have not properly opposed the notion. As the *Lancet* says, "Fat babies to the touch are cold, gelatinous and flabby, with none of the elasticity and tone characteristic of the vigorous, healthy, breast-fed baby. When fed a large proportion of carbohydrates of sugar, infants are apt to have a curiously translucent, almost opalescent appearance of the tissues." This represents the true state of the fat baby which is rather a pathologic specimen than the model of health they are considered to be by the judges at the baby shows. There is no doubt that if this idea could be properly brought before the public many infants would be healthier and more resistant to infection than is the case at the present time, when deliberate "feeding for fat" is almost the rule, though such infants are rather seriously handicapped than helped by the additional weight they have to carry in the race of life.

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[1] Lancet, June 20, 1903.

A LAW AGAINST "NASTY ADVERTISEMENTS" IN MICHIGAN.

The new Michigan Medical Practice Act, which goes into force in a short time,[1] had added to it just before its final passage an amendment which authorized the Board of Registration in Medicine to revoke the certificate, after due notice and hearing, of any registered practitioner who inserts advertisements in newspapers, pamphlets, circulars or other written or printed paper relative to venereal disease or other matter of an obscene or offensive nature derogatory to good morals. This amendment was unanimously passed by the legislature, and with practically no opposition; not even from the newspapers. The profession in Michigan has become well organized, and was thus able to take up this work with reasonable hope of success. It was this effort of a united profession, backed by one or two newspapers, which made success possible. Due credit should be especially given to one newspaper, the *Detroit Journal*, which for a long time has refused to admit to its pages any quack advertisements, and which fought for and was one of the factors in securing the amendment.

It is to be regretted that this work can not at once be carried further, and that these nasty, as well as demoralizing, advertisements can not be entirely eliminated from our newspapers everywhere. The Michigan law only reaches the advertising quacks in Michigan, and does not affect the same class who reside in other states and yet who may advertise in the Michigan newspapers. If the legislators in other states will enact similar laws and give the licensing boards the right to revoke certificates for such advertising—and such legislation can be had in every state if the profession will go about it in the right way—then we may hope to purge our profession of its greatest curse, and remove from newspapers the filthy and disgraceful advertisements, not only in Michigan, but elsewhere. The law is a most righteous one, no matter from what point of view we may look at it, and Michigan has certainly set an example for other states to follow. This is not of interest to the medical profession alone, but much more in the interest of the public and good morals generally. In fact, it is in the interest of preventive medicine. The result of the wretched stuff sent out by these advertising quacks is not only debasing, but is also the means of making many who read it hypochondriacal, and has a direct tendency to the increase of mental disease. It is the policy of this class of advertisers to demoralize, as well as to frighten, their victims, and then to rob them. The corrupting influence of such advertisements is manifest to everyone, but their mentally weakening and depressing influence is best evidenced before the practicing physician. It is time that our legislators should be called to a sense of their responsibilities in this matter.

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[1] See page 45.

We earnestly urge those who are interested in legislation everywhere to consider the advisability and possibility of getting such an amendment to the now existing *Medical Practice Acts*, as that to which we have above referred, and to make it to apply not only to those who advertise within the state, but also to those who advertise in papers beyond its limits.

FOURTH OF JULY INJURIES.

As long as we celebrate the Fourth of July in the customary manner, we may expect the usual number of injuries on this day. This is one of the cases in which we can do little in the way of preventive medicine, yet while we may not hope to reduce the number of accidents, by proper care we may be able to minimize the ill effects which so frequently follow them.

The injuries common to Fourth of July accidents may be divided into two classes: (1) Those which produce considerable damage to the person, but are attended with little danger to life; (2) those which are comparatively trivial, so far as the damage done is concerned, but which are attended with great danger to life. In the first class may be placed such injuries as the loss of a portion or all of a hand or arm, due, for instance, to the explosion of a giant cracker. In these cases, although the loss of tissue may be great, the end is usually in recovery. They should all be treated as infected wounds from the start, and great conservatism should be exercised in the removal of injured parts.

It is to the second class to which attention is particularly directed. To this class belong the numerous small wounds produced by the toy pistol, the blank cartridge, the fulminate cap, etc. These wounds often appear trivial and unimportant on the surface, but herein lies one of their chief dangers. They appear so trivial that frequently they are neglected. Their principal characteristic is the penetration of the soft parts by a small particle of foreign matter, such as the wad, particles of unburned powder, a portion of a cap, etc. These foreign bodies carry into the depths of the wound the ordinary pyogenic germs or the much more dangerous tetanus bacillus, and unless the wound receives the *proper treatment from the start*, the most disastrous results may follow.

The tetanus bacillus finds around a foreign body in the depth of a small penetrating wound *from which the air is excluded*, the best possible conditions for its development and growth. Such being the case, the plan of treatment is well defined. No matter how *innocent or trivial these wounds may appear on the surface, they should invariably be laid open freely at the earliest possible moment, either under local or general anesthesia*, in order that it may be thoroughly done; *all foreign matter sought and removed; the wound cleansed with an antiseptic solution—1-1,000 bichlorid or dilute peroxid, and dressed as an open wound to which the air has free access.*

If this line of treatment be instituted early, there will be little danger of tetanus. In case the wound is not seen until some days after its reception, the same open method of treatment should be instituted, but in addition, it is advisable to inject tetanus antitoxin as a prophylactic. By following this simple plan, many of the deaths due to lock-jaw after apparently slight Fourth of July injuries will be prevented.

ACCIDENTAL INFECTION WITH BLASTOMYCOSIS.

The clinical report in The Journal last week[1] of a remarkably interesting and important case of accidental infection with blastomycosis (more properly oïdiomycosis) by Dr. Newton Evans, calls for a word or two of further comment.

It will be recalled that the infection followed an insignificant wound received at an autopsy of the case of systemic blastomycosis reported by Ormsby and Miller and discussed at that time briefly in the editorial[2] columns of The Journal. The clinical cause and the gross appearances of the case of accidental inoculation are well described in Dr. Evans' paper. The special feature of the case to which it seems well to direct attention is the fact that this is the first known instance of blastomycetic infection in which the exact source of the disease is established. That source undoubtedly being another case of blastomycosis, we have here the nearest approach as yet at hand to establish definitely upon unassailable basis the pathogenic importance of the blastomycetic organisms concerned, or mold-fungi, and which appear to be identical in the two cases. It has not yet been possible to produce experimentally in animals any process at all similar to blastomycetic dermatitis in man, and consequently more or less doubt has been expressed on various sides, principally by clinicians, as to there really being any disease like blastomycetic dermatitis. This is evident enough from the discussion of Dr. Evans' paper.

In Germany th lled “American disease” has been ridiculed fre romayer, and this in spite of the urse of the disease

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1. Journal A
2. Journal A

and the gross appearances of the lesions are quite distinctive and characteristic, while at the same time the histology of the lesions is peculiar and distinctly different from that of cutaneous carcinoma, tuberculosis and syphilis. The history of blastomycetic dermatitis shows that attention was first called to its occurrence in Chicago by pathologists whose interest was arrested primarily by the distinctive histologic peculiarities of the lesions. Now the situation of the organisms in the cutaneous lesions, often away from the surface, and their relations to the well-known miliary abscesses, speak strongly against accidental presence, while the absence of tubercle bacilli, as shown best by negative results from inoculation of guinea-pigs, serves to exclude definitely at least tuberculosis. And then the development of generalized blastomycosis with massive accumulations of blastomycetes in the lungs and elsewhere demonstrates further their pathogenic importance, as well as the eventual seriousness of the disease.

Finally, we have Evans' case of undoubted accidental inoculation to still further clinch the matter. The fact that the disease in this case described by Evans seems to be localized in the skin, while the source of the infection was a general blastomycosis, resembling greatly the so-called protozoic disease of Posadas, Wernicke, Rixford and Gilchrist, would go to strengthen the claim advanced by Ricketts[3] that the "protozoic disease" is a manifestation of the same infectious process as blastomycetic dermatitis.

AN ENDOWMENT FOR MEDICAL EDUCATION.

Some months ago we announced a professional gift to the medical department of the University of Chicago—Rush Medical College—by Mr. Rockefeller. Representations had been made to Rockefeller of the needs of the institution if it is to carry out the ideals in medical education that its friends desired, the necessary amount being put at $7,000,000 to $10,000,000. Mr. Rockefeller then made his offer to give the required amount provided $1,000,000 was raised by Chicago. July 1, 1903, was set as the date at which the money should be raised. On Tuesday the committee having the matter in charge unofficially represented that the million dollars had been raised. Few realize what this means to medical education of the United States. It is of national interest, for it means a long step forward, and one that will affect the medical education of the United States. It is not Chicago only, but the whole country that will profit; it is not the medical department of the University of Chicago alone, but all medical educational institutions that will feel the impetus and be benefited.

SOIL NITRIFICATION AND MOSQUITOES.

The extinction of malaria is one of the great medical questions of the day, and it is only natural that active minds should constantly find new points bearing on this subject. One of the latest suggestions is that given by Dr. Arthur R. Waddell in the *Lancet*, June 6. In experiments on the destruction of mosquitoes and mosquito larvæ he was impressed with the observation that very minute quantities of ammonia were decidedly fatal to these insects. Using strong liquor ammonia as a standard, a solution of 1 in 4,000 proved absolutely fatal for mature larvæ, and a solution so much weaker killed immature larvæ that he made the calculation that 1 in 20,000 or 30,000 would be sufficient to make water uninhabitable for them. His experiments indicated that ammonia is poisonous to mature larvæ in all its combinations. This suggested to him the fact that the nitrification of the soil might be one of the active factors in the prevention of malaria through its unfavorable effects on the growth of mosquitoes, and he thought that he saw evidence of this in the decrease of malaria under more scientific cultivation in certain parts of Great Britain. He attributes this to the enormously increased use of nitrogenous manures and the cultivation of plants whose roots give support to nitrifying bacteria, such as clover, etc. Against this, though he does not mention it, might be stated the fact that virgin soil is particularly favorable to malaria, though its nitrogen content has not been exhausted by cultivation, and that malaria in this country decreases with cultivation, even without a very extensive addition of nitrogen fertilizers. Still, there may be something in the author's suggestion, and at least it is worthy of consideration.

A HOUSE ENDEMIC OF MALARIA.

An interesting example of the mosquito origin of malaria is furnished by a house endemic reported by Jancsó.[1] It seems to explain how fresh cases may occasionally spring up in winter, aside from the well-recognized relapses. In November and December, with ice and snow on the ground, there occurred in the hospital, both among the patients and the staff of assistants, nine cases of malaria, recognized as such by the clinical behavior and by the detection in the blood of the parasites, in every case those of the estivo-autumnal variety. The explanation of this occurrence, unusual for the time and place, was found in the fact that a few days before the cage containing several specimens of anopheles that had been experimentally infected with this variety of plasmodium was overturned accidentally, the mosquitoes escaping, but not, as was thought at first, being destroyed by the cold. As was later discovered, the insects had sought out wards and rooms that, while not as warm as the incubator temperature they had left, still enabled them to live, and to bite several patients ill of diseases other than malaria, as well as several well individuals, among whom was Dr. Jancsó himself. The culprits were found, and several were examined, showing the sporozoites that had developed from the previous experimental feeding. Dates, clinical features, microscopic findings in the blood and in the mosquitoes are all carefully given, so that the proof seems conclusive that the origin of this house epidemic certainly lay in the bites of the twenty escaped and infected anopheles. This outbreak of malaria in winter, at a time when mosquitoes are supposed to be dead or hibernating, is, therefore, no argument against the mosquito theory, as some would foodstuffs. Retail dealers have recently been put under bail to answer in court to the charge of selling impure lard, cocoa and vinegar. There is a rumor that dealers will test the constitutionality of the law creating the Dairy and Food Commissioner.

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[3] Journal of Medical Research, 1902, vi, No. 3.

[1] Jancsó: Deutches Archiv für Klinische Medicin, Bd. lxxvi, p. 474.

Philadelphia.

Bathhouses Open for Season.—The thirteen public bathhouses of the city were opened for the season June 15. During the first week they were patronized by 122,086 persons.

Voodoo Doctor Guilty.—George P. Hossey, the negro herb doctor, charged with furnishing the wife of William G. Danz arsenic for the poisoning of the latter on June 26, was pronounced by the jury guilty of murder in the first degree.

Enforce Anti-Spitting Ordinance.—The superintendent of police has recently ordered police lieutenants strictly to enforce the ordinance of March 9, 1903, imposing a fine of $1 and costs for each offense of spitting on sidewalks, in public conveyances or places of public resort.

Physician Gets Fraction of Fee.—Dr. Walter C. Browning, it will be remembered, presented a claim of $350,000 for professional services against the estate of the late State Senator Chris L. Magee. The court's decision recently rendered in Pittsburg allows Dr. Browning $34,163.

Typhoid on the Wane.—Typhoid fever, which for months has been almost epidemic, has shown a marked decrease in the past few weeks. For the week ended June 20, 147 new cases were reported, as against 238 for the previous week. For the same period 37 new cases of smallpox were reported.

The Late Dr. Thomas G. Morton.—The faculty of the Philadelphia Polyclinic and College for Graduates in Medicine has recorded by resolutions its sense of deep loss in the death of Dr. Thomas George Morton, one of the founders of the institution and throughout the period of its existence successively professor and emeritus professor of orthopedic surgery.

University Commencement.—At the one hundred and forty-seventh commencement of the University of Pennsylvania, June 17, a class of 107 graduated in medicine. Honorary degrees were conferred on seven distinguished men. One of the latter was Colonel William Crawford Gorgas, U. S. Army, to whose sanitary administration at Havana is due in large measure the comparative immunity of that city from yellow fever and other contagious diseases. The degree of Doctor of Science was fittingly bestowed on Colonel Gorgas.

Strauss Gives Pasteurizing Plant.—In accordance with the plans of Dr. Edward Martin, director of the Department of Health and Charities, a central plant to provide at cost pasteurized and modified milk for infants is being established on Filbert, near 15th street. The proposed plant will prepare 10,000 gallons of milk daily. Private subscriptions will defray the expense of preparation. The plant is said to be the gift of Mr. Strauss of New York, and the Children's Aid Society will have charge of the distribution of the milk. Milk will probably be provided free of charge where parents are too poor to pay. A census of infants under one year is being taken by the police to determine where distributing stations are most needed. Four additional milk inspectors have been appointed, and it is the purpose rigidly to enforce the laws against the selling of impure or adulterated milk. Shops will be closed and fines imposed where fraud is detected.

Pollution of the Schuylkill.—The recent inspection of the Schuylkill River by Dr. A. C. Abbott, chief of the bureau of health, and a corps of assistants, in order to determine sources of pollution, has led to the conclusion that the water supply of Philadelphia could not be worse, and that its quality has not improved in the last five years, since the agitation for purity began. Filth of all description is thrown into the river, and as much of the pollution is outside the city limits, if any practical good is to come from the inspection, it must be by co-operation of the State Board of Health. The latter body will be asked to unite with the city officials in using all lawful means to prevent contamination of the river. Upper Roxborough's filter plant was placed in operation on June 26. It will finally filter about 18,000,000 gallons a day. It is at present limited to 8,000,000 gallons a day to allow the beds to ripen. To stop pollution of the Schuylkill, steps have been taken by the department of health to abate 76 nuisances in Manayunk. Chief Abbott has had printed and distributed to every householder "boil water" cards. The cards are provided with hangers, and are to be hung on water faucets. The notices read: "Important to householders.—Water containing typhoid germs is rendered harmless by boiling one minute. Boil water in the evening. Keep it in a clean, cool place over night. Keep free from dust."

GENERAL.

Colleges Combine.—The consolidation of the Saginaw Valley Medical College, Saginaw, with the Michigan College of Medicine and Surgery, Detroit, was consummated, June 29.

The Health of Cuba.—The monthly report of Dr. Carlos J. Finlay, chief sanitary officer for the Island of Cuba, says the showing for 1902 and the beginning of 1903 is very satisfactory, not only in regard to the complete exemption from yellow fever and smallpox, but also in the number of deaths from malaria and in the total mortality. There has been no smallpox on the island since July, 1900, nor yellow fever since September, 1901.

Frauds on Physicians.—A correspondent in Wisconsin has requested The Journal to warn its readers against two firms whose silvery-tongued solicitors have made him and many of his professional brethren yield their signatures and their money. The first is a "Medical Exchange," in which physicians are invited to buy stock, thereby securing the privilege of purchasing surgical instruments and supplies at considerably below market price. The exchange, it seems, is migratory, and is believed by some of its stockholders to be a fraud, as they have been unable to get money, goods or satisfaction from the concern. The second firm is a so-called "Art Publishing Company" of Chicago, which, he avers, has furnished him with engravings from worn-out plates, and thus far has failed to keep the promise implied in its contract of furnishing him in addition, free of charge, a premium ranging from a set of dishes or stem-winding watch (metal not being defined) to a musical instrument.

CANADA.

High Infant Mortality.—The Montreal health department has announced that one-half of the deaths in that city last week were of infants. The normal weekly death rate is about 115, but the total deaths last week amounted to 186, of which number 93 were children. It is considered that this high death rate is due to the inferior quality of the water supply.

No Federation of Universities in Maritime Provinces.—The alumni of King's College, Windsor, N. S., held an important meeting June 17, at which 300 members were admitted to the Alumni Association. The proposal to consolidate with Dalhousie University was warmly discussed and voted down. It is proposed to reorganize King's College, to reconstruct the faculty and to have a new dean.

Amalgamation of Trinity and Toronto Medical Colleges.—Progress has been made in this matter to the extent that the corporations of the two medical faculties have agreed to amalgamation. It now depends for final consummation on the action of the corporation of Trinity University whether they will accept federation with the University of Toronto. The meeting for this purpose will be held in the early part of July.

Vaccination By-Law Illegal.—Judgment has been rendered by Mr. Recorder Weir of Montreal declaring the vaccination by-law illegal in so far as it tends to prevent an employer from allowing his employes to enter any office or factory without holding a certificate of vaccination. Action had been taken by the city against a life assurance company for allowing an employe to frequent the office without the necessary certificate of vaccination.

Personals.—Dr. A. E. Garrow, Montreal, has returned home after three months spent in German hospitals.——Dr. R. Ernest McConnell of Volksrust, Transvaal, is visiting his father, Dr. J. B. McConnell of Montreal.——The following Toronto physicians have gone to England for the summer: Drs. F. LeM. Grasett, R. A. Reeve, Alexander McPhedran, D. King Smith, and Mr. Irving H. Cameron.——Dr. Arthur Jukes Johnson has been appointed chief coroner for the city of Toronto.

FOREIGN.

Mortality of European Capital Cities.—London's mortality for 1902 was at the rate of 18.64 per 1,000; that of Paris, 18.4; of Vienna, 19.4, and of St. Petersburg, 23.

Memorial Meeting in Honor of Gerhardt.—The late Prof. Carl Gerhardt of Berlin would have been 70 years old if he had lived to May 5. On that date a memorial ceremony was held at the Berlin Charité, addressed by Professor Martius of Rostock. A portrait of Gerhardt was presented by his assistants, to be placed in the medical clinic formerly under his charge.

New University Buildings at Berne.—The installation of the Berne University in its new quarters was duly celebrated June 4. The buildings have cost about a quarter of a million dollars, and on the campus a statue of Alb. von Haller is to be erected.

The Divided Twin Dying.—The young Hindoo, Radica, is slowly succumbing to the disease which caused the death of her twin sister from whom she was separated a year or two ago. She is confined to her bed and has been admitted to the "Cancer Home" at Paris as an incurable.

Study of Malaria in Russia.—The Russian National Medical Association, which honored the memory of Pirogoff by changing its name to that of the "Pirogoff Association of Russian Physicians," has equipped and sent out two expeditions for the study of malaria, one in the Caucasus and the other in the Woronesh province. The latter is in charge of the privat docent of bacteriology at Moscow, Dr. Berestnew.

Adulterated Milk.—A writer in the *Journal des Debats* attributes the high and increasing infant mortality of Paris and the provinces to the use of watered milk and the failure of the authorities properly to inspect the milk supply to hospitals. In Hanover, otherwise a healthy city, the infant mortality is said to be 60 per cent. higher than that of Washington, D. C., where strict inspection of milk is maintained.

Foreign Medical Students in France.—There are only four medical students from the United States inscribed in the French medical colleges at present. The number has not been above six since 1896 and 1897, when it was respectively 14 and 10. The more stringent regulations since then have reduced the total number of foreign students from about 1,054 to 585. The total number of French medical students has also diminished from 7,779 to 6,960.

Convalescent Home for Physicians in Germany.—The appeal for funds to erect a resort for convalescent members of the profession in Germany has been mentioned in these columns. It has already met with a response, as the director of the stock company exploiting the baths at Salzschlirf has donated a beautiful tract of land for the purpose at Ilbeshausen, Hess. Hills, dales and virgin forest combine to render it an ideal spot. A committee is to be appointed to solicit subscriptions and the project will probably soon be realized.

A Paris Physician Condemned for Larceny.—The *Journal de Méd. de Paris* gives the particulars of a case which has been pending in the courts for two years. A physician was accused of stealing some statuettes, an umbrella and some cosmetics at a large department store. He confessed that he took the goods to pawn them to get food to eat. He stated that he had only a single patient and that the latter was ill only at long intervals. The case was appealed, but the decision of the lower court was confirmed, condemning the physician to six months' imprisonment.

Medals for Victims of Professional Duty.—The Paris authorities have bestowed medals on seven nurses in the hospitals who during the past year have contracted a contagious disease from some patient in their care. The medal is awarded to "victims of professional duty." A pension is given the family of persons who have died "victims of professional devotion," referring to some exceptional act of self-sacrifice. This pension was recently awarded to the family of a young French physician in Algiers who himself proceeded to disinfect the premises where plague had occurred when no one else would approach the place.

The New Cancer Research Institute at Berlin.—In order to provide better facilities for von Leyden's research on cancer in connection with his medical clinic, the Berlin University authorities have erected a laboratory and two wards in the grounds of the Charité Hospital, near Koch's barracks, for this purpose. Each ward has eight beds with two private rooms. The institution was formally inaugurated June 8. Dr. F. Blumenthal has charge of the work, assisted by F. Meyer, L. Michaelis and the chemist Wolf. Loewenthal and Braunstein are voluntary assistants.

French Committee on Public Hygiene at St. Louis.—Professor Brouardel of Paris is president of the committee and Boix of the *Archives Gén. de Méd.* is secretary, with Ledé and Manson as assistants. The vice-presidents are E. Besnier, L. Labbé and Leroy des Barres. Bordas and A. Josias have been appointed to deliver addresses. All are prominent and well-known scientific workers. Josias' address on serotherapy of typhoid fever was one of the most interesting communications at the Madrid Congress. Labbé has been recently elected a member of the Institut, and his friends collected subscriptions to present him with a medal as a souvenir of the occasion. Brouardel's fame is international as a leader in hygiene and forensic medicine.

Measures Against Dispensary Abuse at Paris.—Lermoyez states that at the Saint-Antoine clinic of laryngology, etc., in his charge all applicants suspected of being capable of paying are given some soothing prescription and told to return in a week, urgent cases excepted. Their names and addresses are taken as usual, but are written on a pink slip as "suspects," and the pink slips are sent to the office, where they are given to the persons connected with the investigating force of the "medical aid at home" service. In due time the pink slips return marked "treatment refused" or "granted," as may be. These measures have been found necessary by the authorities in the various hospitals as the placards warning that the service is restricted to the poor have proved insufficient to check this abuse. Lermoyez's article in the last *Presse Medicale* is a very amusing sketch of the subject, describing his surprise when his attention was called one day to the fact that his charity service seemed to be becoming a gathering point for society people. He condemns in strong terms the practice which seems to be widespread at Paris for practitioners to send to this free service some of their pet, well-to-do clients with a letter commending them to the special attention of the physicians in charge. The dispensary abuse injures the poor, the tax-payers, and above all, the members of the profession. It is like making the man who is to be hung send out and buy the rope. He relates some curious examples of the abuse, and refutes the arguments that might be raised against the present plan, among others the plea that putting the patient off for a week might conflict with his leaving town if he lived in the country: "Why should the tax-payers of Paris pay for dilating the urethral strictures or curetting the adenoid vegetations of people who reside at the other end of France?"

Death Rate of British Towns.—Merthyr Tydvil, according to the registrar-general's report for 1902, is the deadliest town in Great Britain. It has an infant mortality of 185 per 1,000; it led all towns for death by violence, and was near the unenviable top as regards smallpox, fever and diarrhea. In order of decreasing deadliness come Liverpool, Wigan, Manchester, Middlesborough, Burnley, Hanley, Bootle, St. Helens, Newcastle-on-Tyne, Oldham, Preston, South Shields, Rhondda, Stockport, Sunderland and Birmingham. The healthiest of 76 great towns is Hornsey, where the death rate is only 9.80 per 1,000. This is much better than the whole of England and Wales, whose death rate is 16.28, and better even than the smaller towns and rural districts, whose rate is 14.80. Other most healthy great towns are Walthamstow, Leyton, East Ham, Willesden and Croydon; and the healthiest seaside towns of size are Bournemouth (13.05), Hastings (13.91), Yarmouth (15.50), and Brighton (15.59). London's rate is 18.64, which is well above the average, and places the metropolis forty-eighth on the list. The worst towns for measles were Burnley, Bristol, Barrow and Cardiff, and for scarlet fever West Bromwich, Burnley, Bolton, St. Helens and Wigan. Diphtheria was worst in Hanley, Rhondda and Middlesborough, and whooping cough in South Shields and Barrow. In London itself the healthiest suburbs are Hampstead (10.8—a shade below Hornsey), Stoke Newington (13.4), Wandsworth (13.5), Lewisham (13.6), Paddington (14.6). The worst places to live in are Finsbury, Southwark, Holborn, Bermondsey, Bethnal-green, Shoreditch, Stepney and the city. The year was a healthy one for London, and disease was much below the average, excepting smallpox, cancer, suicide and homicide. There were 329 deaths from horses and vehicles, 3,410 from other violence, 535 suicides, 71 homicides and 7 executions.

Correspondence.

The Transmission of Yellow Fever.

A REPLY TO DR. AGRAMONTE.

WASHINGTON, D. C., June 26, 1903.

To the Editor:—In connection with my paper published in THE JOURNAL of May 23 several statements made by my esteemed colleague, Dr. Aristides Agramonte, in his letter published in the JOURNAL of June 13, call for reply, and I beg to be permitted to submit the following necessary explanations: With manifest feeling Dr. Agramonte takes exception to the omission of his name in the early part of my paper—and naturally too, in view of his lack of knowledge of the facts—and proceeds to show that I was in error in my statement that the decision to put the mosquito theory to a practical test was arrived at during a consultation between Drs. Reed, Lazear and myself. He then makes certain statements in regard to our late colleague, Dr. Lazear, with which, with one exception, I heartily agree, and which no one, so far as I know, has ever, openly or tacitly, attempted to deny or conceal. I am then accused of being an unbeliever at the time when I was bitten, and the letter closes with an arraignment of me for attempting to deprive Finlay of the "glory of his discovery," and an emphatic assertion of Finlay's right of priority.

In the first place Dr. Agramonte's name was omitted because he was not present at the meeting referred to, which took place at Columbia Barracks, where we were quartered, on the eve of Dr. Reed's departure for the United States in the beginning of August, 1900. As Dr. Agramonte resided in Havana and had a separate laboratory at Military Hospital No. 1, he was absent from many similar consultations. It is true, however, as he states, that he was present at a previous meeting, when the mosquito theory was brought up, and it is also true that the various theories and probabilities were the subjects of constant consideration and discussion. At the meeting in question Carter's observations pointing to a period of incubation or development in an intermediate host were brought up, so also was the erratic manner in which the disease seemed to jump from house to house, often across a street or farther, without intercommunication between the inhabitants, in other words the transmission of the disease through the atmosphere; the numerous points of resemblance between the modes of dissemination and seasonal occurrence of yellow fever and malaria, etc. These were not new topics, for they had been discussed almost daily, and a decision was promptly arrived at to put the mosquito theory to a practical test, and if that failed of result, to resort to anaërobic cultivations, particularly from the intestine. The serious nature of the work decided on and the risk entailed on it were fully considered, and we all agreed, as the best justification we could offer for experimentation on others, to submit to the same risk of inoculation ourselves. The fact of the meeting, the conclusions arrived at and the agreement to submit ourselves to the bites of contaminated mosquitoes are susceptible of proof, for they were stated by me in a letter written a few months later to the widow of our devoted colleague (Dr. Lazear) in response to her request for a detailed statement of the circumstances attendant on her husband's death.

I acknowledge frankly that I was, in a measure, an unbeliever at the time I submitted to inoculation, for the evidence Finlay presented was far from convincing, chiefly because he had worked in a hotbed of the disease. I was perfectly willing, however, to take a soldier's chances, and afterward enjoyed the satisfaction of being the first person to become aware, by actual proof, of the efficacy of the mosquito, and the first genuine case of experimental yellow fever on record. These facts are also susceptible of proof. There was strong ground for the assumption on the part of certain persons that I did not believe in the mosquito theory, even after I suffered my attack. During my convalescence I was plied with questions by Doctors Finlay, Guiteras, Agramonte and others who inquired whether the mosquito had anything to do with my attack. My replies were always evasive and intended to mislead, because of the necessity for the strictest secrecy to avoid premature publicity. I made only one exception in a medical officer of the regular army, now in Washington, whom I knew to be an intimate and trusted friend of Major Reed. As a matter of fact the results were not communicated to Dr. Agramonte until Dr. Reed was about to leave the island a second time, with the completed report to be read at the meeting of the American Public Health Association at Indianapolis in October, 1900. He then told me he was about to carry the paper into Havana and acquaint him with its contents; on his return he manifested much amusement over Dr. Agramonte's astonishment when the news was imparted to him.

Lastly, perhaps, it is natural that the Cuban ex-member of our board should desire to see Dr. Finlay awarded credit for the discovery, but Dr. Finlay is no more entitled to credit for the discovery of the mosquito theory of the transmission of yellow fever than Manson is for the discovery of a similar theory for malarial fever. The cases are precisely analogous, except that Finlay attempted to prove his hypothesis and failed; Manson did not enjoy the opportunity, and he gives full credit to Ross. According to the article cited by Agramonte (*Medical Record*, New York, May 27, 1899), Dr. Finlay is also entitled to credit for another discovery, viz.: that malarial infection is transmitted by flies from the bloody dejecta of patients, through the intermediation of food and beverages. Finlay here makes the statement that "Koch's assertion that 'where there are no mosquitoes there is no malaria,' is altogether too absolute."

Those who are interested in the subject of yellow fever are referred to the statements of Dr. George H. F. Nuttall of the University of Cambridge, in No. 2, Vol. III, of the *Journal of Hygiene*, which has just been brought to my notice.

James Carroll, M.D.

Pension and Accident Acts in New Zealand.

Huntly, N. Z.

To the Editor:—We have in this country much legislation which is somewhat experimental in type and nearly always socialistic in form. This is certainly very much of a haven for the laboring man. He has his old age pension, etc. There is one law which may prove of interest: "The Accident Compensation Act." An employer is responsible for all accidents occurring to his employes. The employer insures his men in an accident insurance company. The coal mine in this town pays over $1,150 per annum as a premium. I will give some cases showing the effect of the act.

I was called to the local coal mine to see a man who had fallen in the mine, causing an incised wound about 3 in. long over the spine and in the lumbar region. There was no apparent injury to the spine or cord. He was under my care for three weeks; the wound healed perfectly. The man was permitted to go to Auckland for a change. While there he apparently became worse and then returned to us with a diagnosis of traumatic neurasthenia. The accident compensation act gave the man half the daily wage he received before the accident. He also received aid from the local miners' accident society. The total amount received per week was more than he previously earned while at work. The company which carried the insurance for the mine sent an agent, who bought off the miner. The latter soon recovered and manifested enough energy to immediately walk four miles.

Another miner, while lifting, received a hernia, went to the local hospital and was operated on. He has received aid for the past four months.

I may say that an employer uses great care in selecting his men. One man with defective hearing, who was in the employ of the mine several years, was discharged when the act came into effect. He can now only secure employment on contract.

The friendly societies are now much of a disturbing element to the medical men of Auckland. They have decreased their fee of £1 ($4.85) per annum to 15 shillings ($3.60). The British Medical Association Branch in New Zealand opposed this and threatened to ostracize any who might accept the societies on such fees. The societies then established their own dispensary and called for four men, each to receive $1,940 per annum and act for the societies only. Three men were secured who will have under their care about 2,000 souls. The societies recently brought their grievance before the premier. He partially made a promise to place some new clause in the Arbitration and Conciliation Act, a board of which settles all disputes between the employer and the employe.

Recently the *Gracchus* from England via Africa brought smallpox to one of our many ports. This has brought to prominence a law not in the past closely adhered to. All children must be vaccinated within four months after registration of birth, unless the parents forward a statement that they are conscientiously opposed to vaccination. Public vaccinators are appointed for each district, and all vaccine is furnished by the public health department.

P. M. Keller.

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

EHRLICH'S TRIPLE STAIN.

Round Lake, Minn., June 20, 1903.

To the Editor:—Please publish in your next issue of The Journal Ehrlich's "triple stain" for blood, and technic.

Henry Wiedow.

Ans.—It is given in von Jaksch's Clinical Diagnosis as follows: "Ehrlich's Triacid Mixture.—This consists of 115 c.c. of a saturated watery solution of orange-green; 125 c.c. of a saturated watery solution of acid fuchsin to which 20 per cent. alcohol has been added. To this are added 125 c.c. of a saturated watery solution of methyl-green and 77 c.c. absolute alcohol, the mixture being well shaken the while."

State Boards of Registration.

The New Michigan Law.

The amended Michigan law provides for a board of registration, five from the regular school, two each from the homeopathic and eclectic and one from the physio-medical school of practice. The governor may select such appointees from the latest lists furnished by the respective state societies of the said schools; such lists to contain at least treble the number of names that each society has members on the board. In case of failure to furnish such lists he may appoint according to his own judgment. All such appointees shall be legally registered physicians and graduates in good standing of reputable medical colleges and actively engaged in the practice of medicine for at least six years immediately preceding the time of appointment.

Section 3.—On and after the date of the passage of this act, all men and women who wish to begin the practice of medicine and surgery in any of its branches in this state, shall make application to the State Board of Registration in Medicine, to be registered and for a certificate of registration. This registration and certificate shall be granted to such applicants as shall give satisfactory proofs of being 21 years of age and of good moral character, but only on compliance with at least one of the following conditions contained in subdivisions one, two and three of this section:

First. The applicant shall be registered and given a certificate of registration if he shall satisfactorily pass an examination before the board on the following subjects: Anatomy, physiology, chemistry, pathology, materia medica and therapeutics, toxicology, histology, practice of medicine, surgery, obstetrics, gynecology, mental and nervous diseases, diseases of the eye, ear, nose and throat, bacteriology, hygiene, public health laws of Michigan and medical jurisprudence; said examination to be conducted as follows:

(*a*) The applicant shall pay a fee of $25.00 prior to examination. Provided, that the examination fee for graduates of any medical school in the State of Michigan, approved by said board, shall be the sum of $10.00.

(*b*) The examination shall be in writing, oral, or both.

(*c*) The questions on all subjects, except in materia medica and therapeutics and practice of medicine, shall be such as may be answered alike by all schools of medicine.

(*d*) The applicant shall, if possible, be examined in materia medica and therapeutics and practice of medicine by those members of the board, or by a qualified examiner appointed by the board, belonging to the same school as the applicant, and no applicant shall be rejected because of his adherence to any particular system of practice.

(*c*) An average percentage of at least 75 per cent. of correct answers shall be required from every candidate. No additional fee shall be charged by this board for the registration of those who successfully pass such examination. Provided, however, that such applicant for examination shall have a diploma from a legally incorporated, regularly established and reputable college of medicine within the states, territories, districts and provinces of the United States, or within any foreign nation (provided such foreign nation accord a like privilege to graduates of approved medical colleges of this state) having at least a four years' course of seven months in each calendar year, as shall be approved and designated by the board of registration in medicine. Also provided that such applicant shall have, previous to the beginning of his course in medicine, a diploma from a recognized and reputable high school, academy, college or university, having a classical course, or shall pass an examination equivalent at least to the minimum standard of preliminary education adopted and published by the board before examiners appointed by and in accordance with the regulations of aforesaid board, and at such time and place as the board may designate. Provided, a student entering a college in Michigan having a preliminary examination of a standard approval by the board of registration in medicine shall not be required to take this examination. Provided, that this requirement of preliminary education shall not apply to those students who, on the date of the passage of this act, were regularly registered as students of legally organized and reputable medical colleges approved of by said board. And provided, also, that the requirement of medical education shall not apply to those graduates of legally organized and reputable medical colleges approved of by said board who had graduated *from such colleges previous to the date of the passage* of this act, and students complying with the other provisions of this section who on January 1st of the present year were regularly registered as students of legally organized and reputable medical colleges of this state, approved of by said board, may obtain a certificate of registration as graduates of such colleges and without examination by the board on payment of a fee of $10.00. The board of [illegible] medicine shall, from time to time, adopt and [illegible] standard of medical education, and no medi[illegible] pproved and designated by said board under t[illegible] of section three, unless, in the judgment of the board, it conforms with such standard.

Second. The applicant shall be registered and given a certificate of registration if he shall present a certified copy or certificate of registration or license which has been issued to said applicant in any foreign nation where the requirements of registration shall be deemed by said board of registration in medicine to be equivalent to those of this act. Provided, such country shall accord a like privilege to holders of certificates from this board. The fee for registration from applicants of this class shall be $25.00.

Third. The applicant shall be registered and given a certificate of registration if he shall present a certified copy of certificate of registration or license which has been issued to said applicant within the states, territories, districts or provinces of the United States *where the requirements for registration* shall be deemed by the board of registration in medicine to be equivalent to those of this act, and shall otherwise conform to the rules and regulations agreed on between the state board of which he is a licentiate and said board relative to the recognition and exchange of certificates between states. Provided, such states shall accord a like privilege to holders of certificates from this board. The fee for registration from applicants of this class shall be $25.00.

Fourth. If any person shall unlawfully obtain and procure himself to be registered under this section, either by false and untrue statements contained in his application to the board of registration in medicine, or by presenting to said board *a false or untrue* diploma or license, or one fraudulently obtained, he shall be deemed guilty of a felony and, on conviction thereof, shall be punished by a fine of not less than $300.00 nor more than $500.00, or imprisonment at hard labor for not less than one year, nor more than three years, or both, at the discretion of the court, and shall forfeit all rights and privileges obtained or conferred on him by virtue of such registration as a physician or surgeon.

Fifth. Any person who shall swear falsely in any affidavit or oral testimony made or given by virtue of the provisions of this act, or the regulations of the board of registration in medicine, shall be deemed guilty of perjury and, on conviction thereof, shall be subject to all the pains and penalties of perjury.

Sixth. The board of registration in medicine shall refuse to issue a certificate of registration provided for in this section to any person guilty of grossly unprofessional and dishonest conduct of a character likely to deceive the public, and said board shall, after due notice and hearing, revoke a certificate issued subsequent to the date of the passage of this act, or subsequent to the date of the passage of Act No. 237 of the Public Acts of 1899, for like cause or for offenses involving moral turpitude, habitual intemperance, the drug habit, or for fraud or perjury in connection with obtaining of a certificate of registration or for a certificate obtained or issued through error, when such offenses shall have been legally established in a court of competent jurisdiction. And, provided further, after the passage of this act, the board may, at its discretion, revoke the certificate of registration, after due notice and hearing, of any registered practitioner who inserts any advertisement in any newspaper, pamphlet, circular, or other written or printed paper, relative to venereal diseases or other matter of any obscene or offensive nature derogatory to good morals.

Sec. 7.—Any person who shall practice medicine or surgery in this state without first complying with the provisions of this act, or any person who shall violate its provisions (except as heretofore provided in Section 3 of this act) shall be deemed guilty of a misdemeanor and, on conviction thereof, shall be punished by a fine of not more than $100.00, or by imprisonment in the county jail for a period of not more than ninety days, or by both such fine and imprisonment, for each offense. It shall be the duty of the prosecuting attorneys of the counties of this state to prosecute violations of the provisions of this act.

Marriages.

R. B. Ussery, M.D., to Miss Buyde Allen, both of Shiloh, Tenn., May 21.

John Oscar Elrod, M.D., to Miss Eyleen Roberts, both of Forsyth, Ga., June 10.

Rowland H. Harris, M.D., to Elizabeth M. E. Kerr, at Battle Creek, Mich., June 18.

S. Leo Oren, M.D., Lewistown, Ill., to Miss Helen A. Wise of Davis, Ill., June 11.

Don Alvador Barnhart, M.D., to Miss Susie Hammett, both of Huntsville, Mo., June 10.

Green Ewing Hill, M.D., Girard, Ill., to Miss Hattie N. Miner of McVey, Ill., June 10.

Minor H. Day, M.D., Donora, Pa., to Miss L. Jean Mechling of West Sunbury, Pa., June 3.

Elmer D. Gardner, M.D., Hancock, Mich., to Miss Lulu Skinner of Flint, Mich., June 30.

George T. Meacham, M.D., to Miss Carrie Reed, both of Taylorville, Ill., at Vandalia, June 9.

James Apthorp Van Horne, M.D., Chicago, to Miss Lutie Huntoon of Waterford, Mich., June 10.

Ernest M. Freeman, M.D. Long Beach, Cal., to Mrs. Jessie E. Zavitz of Westminster, Cal., June 3.

Frank Kenworthy, M.D., to Miss Eleanor Selene Seebick, both of East End, Pittsburg, Pa., June 17.

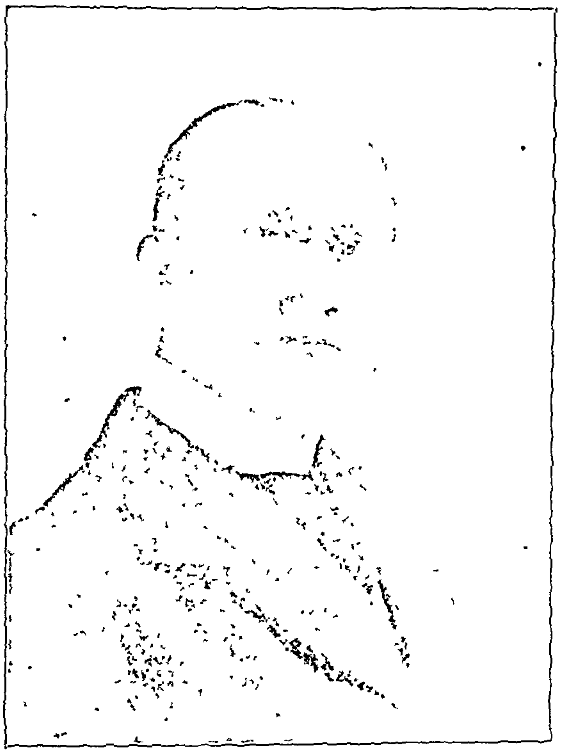
Richard W. McCracken, M.D., Union Grove, Wis., to Miss Anna B. Wetmore of Beloit, Wis., June 17.

Walter N. Chinn, M.D., Hague, Westmoreland County, Va., to Miss Emily Baskerville of Dinwiddie County, Va., June 25.

Deaths.

Isaac Newton Love, M.D.

The many friends of Dr. I. N. Love were shocked to hear of his sudden death, for he was supposed to be in excellent health. Isaac Newton Love was born in Barry, Ill., Sept. 13, 1848, and was, consequently, nearly 55 years of age at the time of his death. At the age of 13 he went to St. Louis to live in the family of his uncle, Dr. J. T. Hodgen, the famous surgeon. After a high-school course he entered the St. Louis Medical College, and was graduated from that institution in 1872. He served as an interne in the St. Louis City Hospital for two years, and then became assistant to Dr. Hodgen. He devoted his attention chiefly to diseases of children, and built up a large practice. For a time he was city physician of St. Louis, and was also instructor in physiology in the college from which he graduated. In 1887 he was elected president of the Mississippi Valley Medical Association, and in the same year was made secretary of the Pediatric Section of the Ninth International Medical Congress. In 1889 he was appointed professor of pediatrics in the St. Louis College of Physicians and Surgeons. He was elected a trustee of the American Medical Association in 1889, and was three times re-elected, serving continuously as a trustee until 1901. In 1893 he was elected vice-president of the American Medical Association, and in 1889 he presided over the Section of Diseases of Children. He founded the *Medical Mirror* in 1890, which he conducted up to the time of his death. He was professor of diseases of children in the Marion-Sims College of Medicine of St. Louis, preceding his removal to New York.



ISAAC NEWTON LOVE, M.D.

Three years ago he left St Louis and located in New York City, where he established himself, and was prepared, as he said, to do the best work of his life. In the short time he was there he succeeded beyond expectations in building up a large practice, and his life gave promise of a practice and a social position equal to that which he once enjoyed in St. Louis. On May 29 he went abroad with a patient who had been operated on by Dr. W. T. Bull, and after seeing her comfortably located in Paris, he returned, sailing on the *Aurania.* He appeared remarkably well and happy, and was exceedingly popular on shipboard. He frequently expressed himself as feeling ten years younger, and manifested his good feelings and high spirits in his customary exuberant way. He was chosen by the passengers to present to the captain and officers of the steamer, resolutions of commendation and thanks, and on June 18, while the steamer was in New York Harbor and nearing her pier, he had risen to perform this pleasant task, had read the resolutions and was delivering the presentation speech in his usual happy and felicitous manner when he suddenly clapped his hand to his head, fell to the deck and died in his cabin a few minutes later. The cause of his death was probably rupture of a blood vessel of the brain. He leaves a widow and two children, Delphine and Hodgen, the latter being about 18 years of age.

Dr. Love probably had as large a personal acquaintance among the members of the medical profession in America as any one physician. He was a man of remarkable social qualities and personal attractiveness, and this made him a most agreeable and genial companion. As one of his old associates says of him, he was fond of his friends, faithful to them, and remarkably free from all petty personal or professional jealousies. He was optimistic in his nature, and generally saw the silver lining of passing clouds. He had a genial and friendly disposition. On the day of his death the Editor of The Journal received a congratulatory letter written by Dr. Love, while in England, in which he spoke enthusiastically of his trip and of his prospects in New York.

The funeral services were held June 22, at St. Paul's Methodist Episcopal Church, New York. The body will eventually be interred in St. Louis.

Orpheus Everts, M.D.

In the death of Dr. Orpheus Everts, at his home in College Hill, Cincinnati, June 19, the profession has lost a man of most attractive personality, a physician of broad attainments and power, and an alienist of more than national repute. Orpheus Everts was born Dec. 18, 1826, in Salem Settlement, Union County, Indiana. He studied medicine under the direction of his father, Dr. Sylvanus Everts, and was graduated from the Indiana Medical College, La Porte, in 1846. At the opening of the Civil War he went to the front as major-surgeon of the 20th Indiana Volunteer Infantry, in which position he remained throughout the war. At the close of the war he devoted his attention especially to diseases of the nervous system; in 1866 he was appointed superintendent of the Indiana Hospital for the Insane at Indianapolis, and filled this position for eleven years. He was also professor of nervous and mental diseases in the Medical College of Indiana. He became well-known as an alienist, and had a large consultation practice. He was frequently called on to testify in important medicolegal cases, notable the trial of Guiteau for the assassination of President Garfield.

Since 1880 he has been made superintendent of the Cincinnati Sanitarium. He had been a member of the American Medical Association for a number of years, and was a member of the Ohio State Medical Association and of the Cincinnati Academy of Medicine. One of the last acts of his professional life was to prepare a paper for the Section on Nervous and Mental Diseases of the American Medical Association, for the New Orleans meeting. This paper will appear in The Journal at an early date.

He had been ill for some weeks. He is survived by a widow, a son—Dr. C. C. Everts of Indianapolis—and two daughters.

John W. F. Moore, M.D. Jefferson Medical College, Philadelphia, 1894, a member of the American Medical Association, Pennsylvania State Medical Society, and some time president and treasurer of the Butler County Medical Society. He was accidentally killed, June 13, by a fall into an unguarded areaway between two buildings. A fracture of the skull at the base of the brain was sustained, and although he lived twelve hours he never regained consciousness. He was 35 years old.

Henry Melville Chase, M.D. Dartmouth Medical College, Hanover, N. H., 1863, formerly an assistant surgeon in the United States Navy, and since 1866 a resident of Lawrence, Mass., died suddenly at his home in that city, June 15, from heart disease, aged 65. He was a member of the Massachusetts Medical Society and of the Lawrence Medical Club, and for several years served Lawrence as a city physician.

Charles F. Deetken, M.D. Long Island College Hospital, Brooklyn, N. Y., 1874, one of the oldest practitioners of Council Bluffs, Iowa, died suddenly at his home in that city, June 19, from heart disease, aged 61. The Council Bluffs Medical

Society, at a special meeting held June 20, adopted resolutions in memory of Dr. Deetken.

Arthur E. McBride, M.D. Louisville Medical College, 1883, died at his home in Sterling, Ill., June 12, from tuberculosis, after an illness of two years, aged 42. He was a member of the Illinois State Medical Society, the North Central Illinois Medical Society, and was retiring president of the Whiteside County Medical Society.

Edward W. Parker, M.D. Medical College of Ohio, Cincinnati, 1872, a member of the American Medical Association, president of the pension board of Gallia County, Ohio, and formerly assistant physician at the Columbus State Hospital for the Insane, died suddenly from heart disease at his residence in Gallipolis, aged 53.

David R. Francis, M.D. College of Physicians and Surgeons, New York, 1866, aged 60, was found dead in his office in Mansfield, Ohio, June 11, under circumstances suspicious of foul play, as a pocketbook which contained a large amount of money was missing, and as a severe contusion was found on the head.

William Winthrop Betts, M.D. Albany (N. Y.) Medical College, 1883, a specialist on climatology, who was obliged to leave Minneapolis on account of his health, went to Utah, and later to Southern California, died at the Christian Hospital, Los Angeles, June 15, from Bright's disease, after a long illness, aged 41.

Anthony L. Carrick, M.D. College of Physicians and Surgeons, Dublin, Ireland, 1852, of Cincinnati, for two terms coroner of Hamilton County, Ohio, and during the Civil War was surgeon of the Second Tennessee Cavalry, died suddenly from paralysis, June 22, at the home of his son-in-law in East Walnut Hills, aged 79.

Alden Edward Bessey, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1870, a member of the Maine Medical Association, and sometime president of the Kennebec County Medical Society and the Waterville Clinical Society, died at his home in Waterville, Maine, June 15, aged 65.

William Harrison Foster, M.D. Medical College of Georgia, Augusta, 1867, professor of materia medica and therapeutics in that institution, for twenty years city physician of Augusta, died at his home in that city, June 17, from cholera morbus, after a short illness, aged 63.

Delos L. Heath, M.D. University of Michigan, Ann Arbor, 1853, died at his home in Seneca Falls, N. Y., June 10, from heart disease, after an illness of a few weeks, aged 75. During the Civil War he served as surgeon in the Twenty-third Michigan Volunteer Cavalry.

Nelson H. Henderson, M.D. College of Physicians and Surgeons, Chicago, 1886, a member of the American Medical Association, died at the Lakeside Hospital, Chicago, June 23, from septicemia following infection received while operating, May 13, aged 45.

Marion Jasper Dudley, M.D. Macon (Ga.) Medical College, 1856, one of the oldest physicians in the state, a captain-surgeon in the Civil War, and who was born and lived all his life in Gordon County, Georgia, died at his home in Sonoraville, June 20, aged 75.

Thomas J. Buchan, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1884, was shot and instantly killed at his home in Eastman, Ga., June 14, by his son, who was endeavoring to protect his mother from his father's violence.

Charles H. David, M.D. Victoria Medical College, Montreal, P. Q., 1878, a specialist in diseases of the ear, nose and throat, Bridgeport, Conn., died at the home of his brother in Waterbury, Conn., June 18, after a lingering illness, aged 47.

George W. Chrouch, M.D. Middlebury (Vt.) Medical College, died from the effect of an overdose of morphin, at his home in Shaftsburg, Mich., June 19, aged 59. He was a member of the American Medical Association.

Thomas Hammill Hicks, M.D. Medico-Chirurgical College, Philadelphia, 1887, an eminent chemist and metallurgist, died at his home in Fort Wayne, Ind., June 6, from angina pectoris, after a short illness, aged 52.

David B. Fonda, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1878, for four years county physician of Cook County, Ill., died in Jefferson Park, a suburb of Chicago, June 20, aged 68.

Thomas T. Marshall, M.D. Kentucky School of Medicine, Louisville, 1884, died at his home in Floydsburg, Ky., June 26, from abscess of the liver, after an illness of two months, aged 43.

Francis A. Miles, M.D. Medical College of the State of South Carolina, Charleston, 1854, died from paralysis at his home in Greenville, S. C., June 16, after an invalidism of seven years.

Fred C. Miller, M.D. Bennett College of Eclectic Medicine and Surgery, 1883, county physician of Pierce County, Wash., died from diphtheria at his home in Tacoma, June 7, aged 45.

Marion F. Marble, M.D. American Medical College, Cincinnati, 1855, died at his home in Gardiner, Maine, June 15, from paralysis, after an invalidism of fourteen years, aged 77.

Moses J. Bushenville, M.D. Barnes Medical College, St. Louis, 1899, of Bowbells, N. D., died at a hospital in Minot, June 20, from typhoid fever, after an illness of a week, aged 35.

Frank H. Crocker, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1882, died from pneumonia at his home in Gardiner, Maine, after an illness of one week, aged 51.

A. E. Levinson, M.D. University of Minnesota, Minneapolis, of Duluth, Minn., died in St. Mary's Hospital, Duluth, June 19, one day after an emergency operation for appendicitis.

Francis Ferdinand Marshall, M.D. College of Physicians and Surgeons, New York, 1886, of New York City and Jacksonville, Fla., died in the former city, June 21, from cancer.

Harry G. Forrest, M.D. Chicago Homeopathic Medical College, 1893, of Jackson Center, Pa., died at Greenville, Pa., from heart disease, June 9, after a long illness, aged 38.

Edward P. Luce, M.D. Cincinnati College of Medicine and Surgery, 1862, a surgeon during the Civil War, died at his home in Bayonne, N. J., June 12, aged 75.

J. N. Perkins, M.D. Columbus (Ohio) Medical College, a member of the Oregon legislature in 1863, died at his home in Eagle Harbor, Ore., June 10, aged 87.

Theodore Connell, M.D. University of Pennsylvania, Philadelphia, died at the home of his father in Scranton, Pa., June 15, after a prolonged illness, aged 32.

George N. Jennings, M.D. Rush Medical College, Chicago, 1864, formerly of Tonica, Ill., died suddenly from heart disease at Covina, Cal., June 1, aged 65.

John C. Halstead, M.D. New York University, 1883, died at his home in New York City, June 17, after a prolonged illness, from tuberculosis of the bladder.

Jacob A. Bollinger, M.D. Missouri Medical College, St. Louis, 1879, of Oakford, Ill., died, June 3, at the Jacksonville Sanitarium, after a long illness.

Hiram A. Phillips, M.D. University of Louisville, 1875, died at his home in Lexington, Ky., June 18, after an illness of several months, aged 52.

W. T. Herrington, M.D. American Medical College, St. Louis, 1889, died at Grant's Pass, Ore., June 17, from paralysis, after a long illness.

Mordecai J. Ambrose, M.D. Medical College of Ohio, Cincinnati, 1837, died at his home in Cincinnati, June 5, after a long illness, aged 89.

Francis Grandy, M.D. University of Michigan, Ann Arbor, 1852, Fairfield, Mich., died in Adrian, Mich., June 19, aged 75.

Sterling Loomis, M.D. Yale Medical School, New Haven, 1898, died recently from heart disease, aged 30.

Deaths Abroad.

F. Saxer, M.D., professor and prosector at the Institute of Pathologic Anatomy at Leipsic, aged 40. He had been connected with the similar institute at Marburg, and had published many articles on the development of the blood corpuscles and lymph glands, on syringomyelia, gliomata and epithelial tumors of the central nervous system, dermoids and teratomata, pneumonomycosis aspergillina, etc. His death was due to an abscess in the brain, which developed from an apparently insignificant infection of one hand.

M. Huizinga, M.D., formerly professor of physiology at Groningen, died there June 2, aged 63. He was particularly interested in chemotaxis, the physiology of the nerves, albuminoids, peptones, etc., and contributed many articles to science on these subjects as also on ozone from the chemical and biologic standpoints, and on the history of physiology, etc.

Joseph De Smeth, M.D., formerly professor of psychiatry and general pathology at Brussels, died there June 10. He was one of the leading alienists of Europe, and had for many years had charge of the unfortunate Princess Carlotta, widow of Maximilian.

J. Iszlay, M.D., professor of odontology at Budapest.

Miscellany.

The Twenty-fifth Anniversary of Dr. Victor C. Vaughan's Graduation.

On the 18th of June, in the presence of the alumni students, colleagues and friends, a volume of contributions to medical research, containing 34 papers, was dedicated and presented to Dr. Victor C. Vaughan by his colleagues and former students in honor of the twenty-fifth anniversary of his doctorate.

Pres. James B. Angell announced that it was his pleasant duty as official head of the university to express the feelings of the authorities as well as of the alumni and undergraduates on this interesting occasion. The custom, as borrowed from the Germans, of thus recognizing the services of a man who had been of eminence and use was a very pleasant one. He was one of those present who was old enough to remember Dr. Vaughan when the latter was very young. He alluded to the changes that have been made in medical education from what it had been in times past. In earlier times the instruction was very largely given by lectures, and some members of the faculty strenuously urged that it was far more profitable for a student to go through a course and hear the same lectures the second time than to hear them the first time. We must not interpret too literally as correct that view of the case.

The laboratory course had come into use since the period of which he spoke, and it was due very largely to the dean of the department, with doubtless the assistance of his associates, that so great emphasis is now placed on this new and more profitable mode of scientific instruction. He could hardly speak in detail of the important part Dr. Vaughan has played during the past twenty-five years, but it was with very great pleasure that those who had witnessed his career as a student had seen him early fulfilling the promise which he had then given of the brilliant scientific discoveries which he has made, and that that promise had been more than redeemed up to the present time, so that his name is well known, and the name of the medical department of the university through him, not only in this country, but also in all European countries. Dr. Angell said that he was sure that every one connected with the university feels grateful to Dr. Vaughan for the services he has rendered, and they were still glad to look into his face and see that he is still a young man and has doubtless a long career yet before him, and all would be very glad to come here twenty-five years hence to another and more imposing celebration.

Prof. Albert B. Prescott of the University of Michigan made the presentation on behalf of the contributors. Professor Prescott said he was honored in being asked to say something in the presentation of this gift. It was a privilege as well as an honor to speak on the part of those contributors who were the most cherished and influential of the medical alumni of the university. In making this gift a memorial volume had been wrought out piece by piece in the unwearied toil of strenuous life. For its making we have a quarter of a century, a period in the life time of an alumnus, an era in the history of the university. This Festschrift is a symposium of scientific learning, a production of permanent value and an essential record of the advancement of science and of the profession of medicine. It consists of thirty-four separate investigations, each one a chosen product of its author's personal power.

If he were competent to speak of these records of researches, he would not have time to even enumerate them, but he recognized that they were from members who had become authorities in the world, by their work and experience in scientific pursuits. As he looked over the titles he saw that they formed a syposium of research covering the fundamental principles and presenting a series of discoveries, which unite together naturally and inevitably to constitute a tribute of honor to the man to whom the gift was being made. The book belongs to him by virtue of its history and by virtue of its subject matter. It was an acknowledgment of the service he had rendered to the world of science and to the university, to the cause of medical education, to advances in scientific work wherever undertaken.

In accepting the volume Professor Vaughan modestly said that the world had been more than kind to him, that he had received many honors which might have been more worthily worn by others, but he never had received one which he appreciated more highly than the present one. He owed much to the University of Michigan. After he had secured the best education possible in his native state, the state of Michigan offered him what he desired in his further studies and within the range of his scanty purse. Whatever he had done and whatever he might do in the future, will hardly repay the University of Michigan for what it had done for him. That was his feeling toward the university. He also acknowledged his indebtedness to those who make up the university, for their assistance and co-operation, those with whom it had been a pleasure to be and an inspiration to work to be associated with them. Of all the research work he had ever done the greatest and best was that, by the authority of the board of regents, he had been able to collect together a faculty of medicine, every member of which was a master in his specialty. It is easy enough to have a good medical school if you have a good faculty and good students. He owed much to the students, and the spirit for good, honest work, and the inclination to be gentlemanly and honorable had always prevailed among the student body of the university. It was an honor that he had been associated as teacher with some of the greatest scientific men of the country; but they did not owe their eminence to him; they would have been great, and probably greater still, had their instruction been received from others. He wanted to specially express his thanks to him from whose hands he had received this volume. Dr. Prescott was the Nestor of scientific research in the university then as he is now, and from him more than any other man he had received his inspiration. President Angell had explained how his classmates and himself got through the university. It was necessary in order to get them through that the lectures be repeated for two succeeding years, and in this way they were finally nourished sufficiently to become doctors and to be turned out on the world. In accepting this volume he would not regard it as a trophy of any achievement, but as a tribute of love and respect, which he prized more highly than anything else. He expected to derive from it inspiration for further work and find comfort from it in his hours of rest. When he is through with it he will bequeath it to his children as his most valuable earthly possession. He took it that the volume was presented to him as a result of the spirit of scientific research of those who have made these contributions, and he hoped the honorable board of regents would grant him the privilege to give a word of advice and to say that we should encourage the young man who is able to do scientific work. It was not until experimental research came in that the world began to grow and develop. It is scientific research that has made the German universities the centers, not only of science, but of letters as well. Scientific research has not always found a most congenial atmosphere in American universities; it has not always been appreciated as much as it might be. The question is, whether the American university of to-day is to become a center of evolution of knowledge and discovery or only an enlarged and amplified high school. Has not the state the right to ask of its universities the very best knowledge possible on every subject in which the welfare of the people may be involved? In conclusion he said he could not adequately express his feelings, but wished to thank all for this highly appreciated gift.

Medical Organization.

Jackson County (Miss.) Medical Society.

At an adjourned meeting held in Scranton, June 10, the new constitution, in conformity with those of the Mississippi State Medical Association and the American Medical Association, was adopted.

Ellis County (Texas) Medical Society.

Twenty physicians of Ellis County met at Waxahachie, June 16, and organized a county medical society, with Dr. James C. Loggins, Ennis, president, and Dr. Charles W. Simpson, Waxahachie, vice-president.

Jefferson County (Wis.) Medical Society.

Fifteen physicians of Jefferson County met at Watertown, June 16, and organized a county medical society, electing Dr. William W. Reed, Jefferson, president, and Dr. Charles E. Lander, Johnson Creek, secretary.

Chickasaw County (Iowa) Medical Society.

Physicians of Chickasaw County met recently at New Hampton and organized a county medical society, with Dr. Ira K. Gardner, president, and Dr. Nicholas Schilling, secretary and treasurer, both of New Hampton.

Grand Forks County (N. D.) Medical Society.

Twenty physicians of the county met at Grand Forks, June 10, to form a county medical society. A temporary organization was effected, and Drs. Henry H. Healy and John D. Taylor, Grand Forks, and Dr. Willam H. Welch, Larimore, were made a committee on organization to report at a meeting to be held this month.

Hillsborough County (Fla.) Medical Society.

At the regular monthly meeting, held at Tampa, June 2, the constitution and by-laws as recommended by the American Medical Association was unanimously adopted. The following officers were elected: President, Dr. Urban S. Bird; vice-president, Dr. James T. Green; secretary-treasurer, Dr. W. Parks Adamson; board of censors, Drs. W. P. Lawrence, Leslie W. Weedon, and John S. Helms, all of Tampa.

San Luis Obispo County (Cal.) Medical Association.

A number of physicians met at San Luis Obispo, June 6, and organized a county medical association with the following officers: Dr. Joseph S. Jackson, San Luis Obispo, president; Drs. John K. McLennan, Paso Robles, and Byron F. Dawson, Cayucos, vice-presidents; Dr. E. A. Dial, San Luis Obispo, secretary, and Dr. J. J. Knowlton, San Luis Obispo, treasurer. The association will apply for affiliation with the state medical society.

Fairfield County (Ohio) Medical Society.

Under the direction of Dr. Theodore W Rankin, Columbus, the physicians at Fairfield County organized a county medical society at Lancaster, June 16, with the following officers: President, Dr. John H. Goss, Lancaster; vice-president, Dr. George S. Courtright, Lithopolis; secretary, Dr George O. Beery, Lancaster; treasurer. Dr. Samuel Renshaw, Sugar Grove, and censors, Drs. John J. Silbaugh, Lancaster; Oliver P. Driver, Bremen, and E. N. Heston, Thurston.

Pottawatomie County (Iowa) Medical Society.

About 40 physicians of the county met in Council Bluffs, June 17, and organized a county medical society, with Dr. Donald McCrae, Council Bluffs, president; Dr. Samuel W. Tobey, Oakland, vice-president; Dr. F. W. Dean, Council Bluffs, secretary; Dr. Grant Augustine, Minden, treasurer, and Dr. Henry B. Jennings, Council Bluffs, delegate to the Iowa State Medical Society. The society adopted the constitution and by-laws suggested by the American Medical Association.

Indianapolis Medical Society.

At its meeting held June 23, the Indianapolis Medical Society-The Medical Society of Marion County, Ind., by unanimous vote, adopted the constitution and by-laws as suggested by the American Medical Association. While the constitution and by-laws of the Indianapolis society were satisfactory to the local profession, yet in the interests of uniformity and harmonious work, and to set an example which would influence other societies, this body cheerfully fell in line with the new movement in this respect, as it is doing in others. The membership of this society has now reached 220, and it is hoped to greatly increase this number in the immediate future.

Societies.

Butler County (Pa.) Medical Society.—At the annual meeting, Dr. John E. Byers was elected president; Dr. Robert J. Grossman, vice-president, and Dr. William B. Clark, secretary, all of Butler.

Newcastle County (Del.) Medical Society.—At the annual meeting in Wilmington, June 19, Dr. Frank Belville, Delaware City, was elected president; Dr. R. Raymond Tybout, Wilmington, secretary, and Dr. Peter W. Tomlinson, Wilmington, treasurer.

Southern Oregon Medical Association.—The twelfth annual meeting was held in Medford, May 12. Dr. H. Percival Hargrave, Phoenix, was elected president; Dr. George E. Houck, Roseburg, vice-president, and Dr. Robert E. Smith, Grant's Pass, secretary and treasurer.

West Tennessee Medical Association.—The twelfth annual meeting was held in Jackson, June 11 and 12. The following officers were elected: Dr. William T. Watson, Lexington, president; Drs. D. Warren Scates, Martin, and Robert W. Tate, Bolivar, vice-presidents, and Dr. Isaac A. McSwain, Paris, secretary and treasurer.

Southwestern Kentucky Medical Society.—This society met, May 12 and 13, at Paducah, and elected the following officers: Dr. Horace T. Rivers, Paducah, president; Drs. E. B. Shelton, Blandville, and Charles N. Crawford, Lynn Grove, vice-presidents; Dr. Van A. Stilley, Benton, secretary, and Dr. Charles H. Brothers, Paducah, treasurer.

Spokane County (Wash.) Medical Society.—At the annual meeting held in Spokane, May 7, the following officers were elected: Dr. Edwin L. Kimball, Spokane, president; Drs. Harry S. Martin, Spokane, and H. H. Slater, Deer Park, vice-presidents; Dr. George A. Gray, Spokane, secretary, and Dr. William L. Hall, Spokane, treasurer.

Gibson County (Tenn.) Medical Society.—The semi-annual meeting was held in Humboldt, June 19. Dr. John T. Faucett, Trenton, was elected president; Dr. Benjamin S. Penn, Fruitland, vice-president; Dr. Basil T. Bennett, Trenton, secretary and treasurer, and Dr. George W. Penn, Humboldt, representative to the Tennessee State Medical Association.

Worcester North District (Mass.) Medical Society.—The forty-fifth annual meeting was held in Worcester April 28. Dr. H. Porter Hall, Leominster, was elected president; Dr. Edward A. Sawyer, Gardner, vice-president; Dr. Walter S. Sawyer, Fitchburg, secretary; Dr. Eustace L. Fiske, Fitchburg, treasurer, and Dr. Luther G. Chandler, Townsend, commissioner of trials.

Medical Society of the State of North Carolina.—To complete the report which appeared in THE JOURNAL of June 20, the election of Drs. John H. Williams, Asheville; John C. Rodman, Washington, and S. Fred Pfohl, Winston, as vice-presidents, and of Drs. J. Howell Way, Waynesville, and Albert Anderson, Wilson, as members of the House of Delegates, must be noted. In 1904 the society will meet in Raleigh, on June 1.

Southern California Medical Society.—The thirty-first semiannual meeting was held in Avalon, Santa Catalina Island, June 3 and 4. The following officers were elected: President, Dr. John C. King, Banning; vice-presidents, Drs. Frank Garcelon, Pomona, and Luther M. Powers, Los Angeles, and secretary and treasurer, Dr. Frank D. Bullard, Los Angeles. The next meeting will be held at Redlands in December.

North Missouri Medical Association.—At the annual meeting held in Columbia, June 19, the following officers were elected: President, Dr. W. V. Yates, Callao; vice-presidents, Drs. Edwin S. Cave, Mexico, and A. N. Wood, Sumner; corresponding secretary, Dr. William O. Hawkinson, Roanoke; recording secretary, Dr. J. H. P. Baker, Salisbury, and treasurer, Dr. Robert Haley, Brookfield, (re-elected). Kirksville was selected as the place for the next meeting.

Norwich (Conn.) Medical Association.—On May 18 this association celebrated its twenty-fifth anniversary. The exercises consisted of an address of welcome by the president, Dr. Patrick Cassidy; a historical sketch of the society by the secretary, Dr. Rush W. Kimball, and an address by Dr. W. Gilman Thompson, New York City, on "The Clinical Value of Recent Laboratory Tests." About 50 physicians of Eastern Connecticut were present at the banquet which followed.

Wayne County (N. Y.) Medical Association.—At the annual meeting held in Lyons, June 2, Dr. James W. Putnam, Lyons, was elected president; Dr. Mary A. Brownell, Newark, vice-president; Dr. George S. Allen, Clyde, secretary, and Dr. Darwin Colvin, Clyde, treasurer. Drs. Jennie M. Turner, Lyons, Lucius H. Smith, Palmyra, and John T. Myers, Sodus, were added to the executive committee, and Dr. Thomas H. Hallett, Clyde, was made a member of the nominating committee, Fourth District Branch.

Congress of Dermatology.—Unusual inducements are offered to members of this congress, which will meet at Sarajevo, Bosnia, September 21 to 23. The Bosnian government has offered a free special train from the borders of Bosnia to Sarajevo, and for several excursions to other points. Very moderate stipulated charges in the hotels are also promised. By invitation of the Hungarian confrères at Budapest, the members are to spend a day there on their way to the congress. Dr. L. Glück of Sarajevo is at the head of the executive committee of the congress.

Association of Medical Officers of the Army and Navy of the Confederacy.—The sixth annual meeting was held in New Orleans, May 19, 20, 21 and 22. The election of officers resulted as follows: Dr. Stanford E. Chaille, New Orleans, who, on account of age and infirmity declined, whereupon Dr. John R. Gildersleeve, Tazewell, Va., was elected; Drs. James D. Croom, Maxton, N. C., William E. Brickell, New Orleans, F. R. Calhoun, Cartersville, Ga., and James M. Holloway, Louisville, Ky., vice-presidents, and Dr. Deering J. Roberts, Nashville, Tenn., secretary and treasurer (re-elected).

Naturforscher Congress.—The seventy-fifth annual congress of the German Association of Physicians and Naturalists will be held this year at Cassel, convening September 21 to 26. The Berlin professor of chemistry, van t'Hoff, will preside. The addresses at the two general meetings will be by Behring on "Tuberculosis," Griesbach on "School Hygiene," Ramsay, London, on the "Periodical System of the Elements" and by Ziehen, Utrecht, on the "Physiologic Psychology of Sentiments and Sensations." Radiotherapy will be the chief theme in the medical section, with addresses by Jensen and Rieder. These congresses are always attended by thousands and have been important landmarks in the history of science in Germany. The aim is to bring together theory and practice, the laboratory worker and the general practitioner, with scientific workers of all kinds. Penck, Vienna, will deliver an address on "Geologic Time"; Schwalbe on the "Prehistoric History of Man," and Alsberg on "Hereditary Degeneration in consequence of Social Influences."

Medical Society of Delaware.—The one hundred and fourteenth annual meeting was held in Dover June 9. Dr. George W. Marshall, Milford, made a report of the meeting of the American Medical Association, to which he was a delegate. The following officers were elected: Dr. Harry G. M. Kollock, Newark, president; Drs. Paris T. Carlisle, Frederica, and Laurence M. Cahall, Bridgeville, vice-presidents; Dr. John Palmer, Jr., Wilmington, secretary; Dr. Joseph M. Martin, Lewes, assistant secretary; Dr. William C. Pierce, Wilmington, treasurer; Drs. Henry J. Stubbs, Wilmington, Joseph R. Smith, Cheswold, and David Hall, Lewes, councilors; Dr. George W. Marshall, Milford, delegate to the American Medical Association, and Dr. Willard Springer, Wilmington, alternate. It was decided to submit to the governor the following names from which to select members of the State Board of Medical Examiners: Drs. Ezekiel W. Cooper, Camden; Francis L. Springer, Newport; Henry W. Briggs, Wilmington; L. August H. Bishop, Dover; Robert G. Ellegood, Concord; William T. Skinner, Glasgow; Charles Green, Greeneville; John Palmer, Jr., Wilmington; Oliver D. Robinson, Georgetown, and David Hall, Lewes. Resolutions were adopted favoring legislation looking to the examination of the eyes and ears of school children. The society adjourned, to meet at Lewes, June 14, 1904.

MASSACHUSETTS MEDICAL SOCIETY

One Hundred and Twenty-second Annual Meeting, held in Boston, June 9 and 10, 1903.

The President, Dr. George E. Francis, Worcester, in the Chair.

First Day.

The morning of the first day was devoted to visiting hospitals and dispensaries. At 2 p. m. the society met in two sections at the Medical Library on the Fenway.

Examination of Stomach Contents.

Dr. Elliott P. Joslin, Boston, speaking on "Inferences to Be Drawn from the Examination of the Contents of the Stomach," explained how simple are the tests necessary for such examination of the fluid obtained by the stomach tube from the fasting stomach, and pointed out the great aid thereby gained for diagnosis and treatment. His paper was ably discussed by Dr. R. H. Chase.

Dietetic Treatment of Constipation.

Dr. Henry F. Hewes, Boston, maintained that nearly every case of constipation can be controlled by adding to the diet suitable quantities of cereals, fats, vegetables, fruits or fermenting carbohydrates, using only as a last resort senna in stewed prunes.

Surgical Treatment of Gastric Ulcer.

Dr. John C. Munro, Boston, urged the joint study of every case by the physician and surgeon. Most cases are medical, but in those cases which are not, operation should be done early. Great advances have been made in the surgery of the stomach in the last three years.

Section in Surgery.

In this section the chief papers were on "Rupture of the Quadriceps Extensor Muscle," "Surgery of the Esophagus," "Prostatectomy," and "Adeno-Carcinoma of the Intestine." These papers were much more freely discussed than those in the medical section, the meeting adjoining only when it was necessary for the councilors to meet.

Councilors.

About 100 members of this representative body met to transact the necessary annual business of the society. The secretary reported the addition of 173 new members during the past year and the death of 42. The treasurer reported a balance of $11,289 on hand, total disbursements of over $26,000, and permanent funds amounting to $37,494.

Arrangements for 1904.

It was voted that the next meeting be held on the second Wednesday in June, 1904, in Boston. The Shattuck Lecture for 1904 will be given by Dr. Juan Guiteras. Dr. Harold C. Ernst, Boston, was elected orator for next year. The officers were re-elected with the exception of vice-president, for which office Dr. J. F. Alleyne Adams, Pittsfield, was chosen.

Shattuck Lecture.

The Shattuck Lecture was given in the John Ware Hall in the Medical Library by Dr. Theobold Smith, Boston, on "The Sources, Favoring Conditions and Prophylaxis of Malaria in Temperate Climates, with Special Reference to Massachusetts." It was a most exhaustive paper, the result of eight or ten years' study of the subject, and was illustrated by lantern views. Considerable portions were omitted in the reading. The author believes that "there is no evidence, experimental or otherwise, that the malaria germs exist outside of their hosts, man and the mosquito." He endeavored to explain immunity, and dwelt on the latent character of the disease, maintaining that infected human beings must be the starting point for any epidemic. Early malaria came from the Indians. Later we have derived it from Italian, Hungarian and negro laborers.

Tobacco and the Heart.

Dr. Ralph C. Larrabee, Boston, said the action of the heart is reduced by even moderate amounts of nicotin, the effect being noticed very quickly. Tobacco smoke contains, he said, from nothing to 50 per cent. of nicotin. Allowing that smoking must prevail, he would advise smokers to use long-stemmed pipes and to keep them clean, and not to smoke cigars too close to the end. No harm will result, he said, from suddenly and completely ceasing the smoking habit.

Posture in Gynecology.

Dr. Daniel H. Craig, Boston, demonstrated that the abdominal pressure induced by coughing, sneezing and straining in women suffering from pulmonary disease probably has a large influence in determining displacements of the pelvic viscera, notably the ovary and uterus.

Anatomy Not an Exact Science.

Dr. Thomas Dwight, Boston, presented a paper on "Problems of Clinical Anatomy," in which he effectively disposed of the idea that anatomy is a completed exact science. He showed by large models what wide variations may exist in skull, vertebræ, aorta and tarsal bones, and explained how surgeons, not knowing of these frequent variations, are misled by *x*-ray photographs.

Privileged Communications.

Dr. David W. Cheever, the "Nestor" of Boston physicians, was greeted with much applause when he came forward to make "A Plea for a Change in the Massachusetts Law in Regard to Privileged Communications." He maintained that the adage of Hippocrates, "Nothing heard in the sick-room should ever be heard outside of it," should be put in practice legally, unless, 1, the patient consented; 2, it was necessary for the doctor's self-defense, or 3, it was necessary to expose crime. All New England and nearly half the states of the Union are following the English law, which obliges the physician to disclose in the courts of justice such information as may have been acquired in a professional capacity, even if it involves the character of the patient's family or disgraces the memory of the dead. New York and about one-half of the states in the Union have adopted the Roman law, which not only exempts the physician, but forbids him from disclosing such information. He pleaded for a change in the Massachusetts laws bearing on this subject, and he suggested that if confidential communication must be disclosed as an aid to justice it should be communicated to the judge in private.

Walter Soren, Esq., Brookline, showed "The Workings of the New York Law," which was devised to protect the patient, and quoted a large number of cases and decisions by the New York courts as determining three points: 1, when the relations of physician to patient become "professional"; 2, what information obtained during this professional relation is excluded, and 3, what information is necessary to the physician to enable him to act.

Tuberculosis.

Dr. Herbert L. Burrell, Boston, delivered the annual address on "Tuberculosis" and illustrated by numerous lantern views. He said:

> The line along which we should work is that of giving the patient greater resistance to the disease. This can be done especially through the use of sanatoriums and other special methods of treatment, including all forms of outdoor treatment. These methods were widely adopted in Germany, where the sanatoriums were supported from the reserve of $175,000,000 fund accumulated as a result of the Bismarck laws regarding insurance of working people. In Germany, moreover, an amount of attention had been given to tuberculosis by the insurance companies that might well be imitated here. There is now a drift of opinion toward the view that change of climate is not so important as other methods of dealing with the disease. Hospitals, with few exceptions, recognize the necessity of outdoor treatment. Sometimes, as in Germany, the patients are kept out of doors all night. Yet, thus far, outdoor life for consumptives is not adequately recognized. There are two errors which continue to be associated with the outdoor treatment—the sending of patients to sanatoriums when they are in an advanced stage of the disease, and failure fully to recognize in the treatment of consumptives the physiologic value of rest.

He urged physiologic rest for the affected organ or part, whether treated medically or surgically, and pointed out the great benefits to be obtained from sunshine, air, diet and care in sanatoria.

Entertainment.

The festivities of the meeting which began in the Cotting lunch, served immediately after the councilors' meeting, repeated in the evening at the reception to the officers, ended at 1 p. m., Wednesday, in the annual dinner served in Symphony Hall, where over 1,200 physicians dined together. After-dinner toasts were responded to by Attorney-General Parker, Rev. M. H. Hall and others.

BUFFALO ACADEMY OF MEDICINE.

Regular Meeting, held May 20, 1903.

Dr. Herman E. Hayd, Chairman, presiding.

Early Diagnosis of Gastric Cancer.

Prof. C. A. Ewald, Berlin, delivered an address on this subject. Since the great strides made in recent years in the domain of abdominal surgery the question of an early diagnosis by the internist of gastric carcinoma has become an important one, for if the case can be correctly diagnosed sufficiently early before metastases have occurred the surgeon may radically remove the growth and the case may result in recovery.

There are cases which show one or all of the following symptoms: 1, A tumor; 2, swelling of nodes, axillary, inguinal, etc.; 3, cachexia, and 4, changes in secretion. These cases are not difficult of diagnosis, but when diagnosed it is too late for radical operation.

Early Symptoms.

The question of early symptoms should be considered when the tumor is not far advanced, when no metastases exist and where there is a possibility of the removal of the growth in its entirety.

The school of Kaussmaul and von den Velden wanted to prove that wherever free HCl was diminished or absent it was sufficient to diagnose cancer of the stomach, but Ewald demonstrated many cases where, although there was an absence or diminution or free hydrochloric acid secretion, they were not cancer, as, for example, neuroses, achylia gastrica, etc.

Boas stated that the presence of lactic acid was an important symptom for cancer. This also has been proven a mistaken belief, for lactic acid depends on one or all of three conditions: 1, No hydrochloric acid secretions; 2, stagnation of gastric contents, and 3, no peptic enzymes. When these three conditions present themselves lactic acid is formed, and it may exist in cases other than cancer. A case of cancer of the gall bladder with pyloric obstruction due to pressure and secondary dilatation of the stomach was cited where lactic acid was present, and where no cancerous infiltration of the stomach could be detected on postmortem examination. The same conditions which apply to the value of lactic acid apply also to the thread-like Oppler-Boas bacilli, which are a lactic-acid forming bacilli.

Gastric Ulcer and Cancer.

Rokitansky and other pathologists showed years ago that many cases of gastric ulcer are transformed in time to carcinoma. If, then, we could detect this transformation sufficiently early an early diagnosis of gastric cancer could be made. In ulcer there is hyperchlorhydria; so soon as the metamorphosis to cancerous degeneration occurs the hydrochloric acid is diminished or disappears. Cases of chronic ulcer going on slowly and which in time give suspicious signs of cancer may be detected if the gastric contents are analyzed and alteration of secretion is noted.

A Polish physician, Gluczinski of Cracow, by making three analyses of stomach conditions: 1, The fasting stomach; 2, after the Ewald test breakfast, and 3, after a more complete meal, found that if these analyses gave the same results of hypersecretion then the ulcer still existed; if, on the other hand, there were variations, say hypochlorhydria or absence of HCl in one or two or three of the test meals, then a suspicion of a beginning cancerous degeneration existed. Gluczinski operated on one case in which after these test meals a suspicion of cancer was diagnosed, and found a beginning degeneration from ulcer to cancer.

Case Report.

Ewald used this method in four cases and gives his result in one:

> Case 1.—Man; aged 39; father had cancer of stomach. Patient has complained for several years of oppression after meals, nausea, eructation and vomiting of undigested stomach contents. He is emaciated, has lost weight. No tumor was detected and there was no glandular enlargement. He had vomited blood once. This probably came from the stomach. The stomach was dilated and there was succussion. Tests were made after Gluczinski. Acidity, 60; mucus and slow digestion of mucus. The fasting stomach showed mucus and no acidity; Ewald's acidity, 72; free hydrochloric acid, 50. After a full meal acidity, 28; no free HCl, but combined HCl.
>
> As a result of these examinations and the history, the case was diagnosed as early carcinoma of pylorus. The operation of pyloric resection and gastroenteric anastomosis was performed by Professor Krause. The patient made a complete recovery. Macroscopic and microscopic examination of the pyloric sclerosed tissue failed to reveal carcinoma. The case was a hypertrophic enlargement of muscles of pylorus which often follows gastric ulcer, so in this case the method described by Gluczinski failed.

Tryptophan Test.

A new method has lately been described by Dr. Glässner, assistant to Ewald. It is called the tryptophan reaction. Into a small vessel containing 10 to 20 c.c. of filtered stomach contents containing free hydrochloric acid, place a small piece of carcinomatous tissue. A glass tube filled with albumin is then placed into this vessel. After a time—about 24 hours—both ends of the albumin tube will show a digestion of the albumin. If the solution is then filtered and a solution of bromin is added, a red coloration will show the tryptophan reaction. If the tissue added is cancerous, this reaction follows, if not, no reaction takes place.

As yet the number of cases in which this test has been made are not large enough to make positive statements as to its value.

Must Rely on Old Methods.

Professor Ewald believes that we still have to rely on other methods for our diagnosis, for after all we must fall back to the detection of the tumor for diagnosis, so that he who is well trained to examine the abdomen by palpation, percussion, etc., will be better able to detect a growth earlier than he who does not practice this form of examination. He recommends that by examining a patient in a warm bath the muscular rigidity may be overcome and more satisfactory results obtained in detecting a growth. He also often uses an ether spray in a circumscribed area over the region of the tumor to relax the muscles.

Epochs of American Medicine.

In conclusion Professor Ewald spoke in laudatory terms of the American institutions which he had visited. He spoke of these epochs of American medicine: 1. When instruction was sought in England; 2, when American physicians visited the French masters, and 3, the present or German epoch. He predicted that in the near future, with the great advances in the medical art in America, the tide would turn and that continental students would seek American institutions and medical education.

Luncheon for Professor Ewald.

Following the address Dr. A. L. Benedict gave a luncheon for the members in honor of Professor Ewald.

NEW YORK STATE MEDICAL ASSOCIATION.

Nineteenth Annual Meeting of the Fourth District Branch, held at Buffalo, N. Y., June 16, 1903.

The President, Dr. J. William Morris, Jamestown, in the Chair.

President's Address.

The president made a brief report of the work which had been done in the past year. At the last annual meeting only three counties—Erie, Chautauqua and Steuben—were represented. This year ten counties were represented by delegates. Last year the membership was 176; at this meeting it was 336. There are still four counties in the district—Ontario, Yates, Livingston and Niagara—which are unrepresented, but he expressed the hope that delegates from these counties would be present at the next meeting.

Election of Officers.

The following officers were re-elected: President, Dr. J. William Morris, Jamestown; vice-president, Dr. Bernard Cohen, Buffalo, and secretary, Dr. William J. Thornton, Buffalo. Dr. Henry A. Eastman, Jamestown, was elected treasurer. Drs. Alvin A. Hubbell, Buffalo, and George L. Preston, Canisteo, were elected delegates to the state association. The following were elected members of the executive committee: Drs. George H. Witter, Allegany County; William H. Vincent, Cattaraugus County; Orrin T. Shaw, Chautauqua County; Allen A. Jones, Erie County; Albert P. Jackson, Genesee County; Thomas A. O'Hare, Monroe County; Edward Munson, Orleans County; Charles O. Green, Steuben County; James W. Putnam, Wayne County, and Philip S. Goodwin, Wyoming County. The committee on arrangements for service for the ensuing year is made up as follows: Drs. J. William Morris, Jamestown; Allen A. Jones, Alvin A. Hubbell, George A. Himmelsbach, William I. Thornton, Bernard Cohen Arthur G. Bennett, Grover W. Wende and William J. Thornton, Buffalo.

Significance of Uterine Retrodisplacements.

Dr. Samuel M. Brickner, New York City, read a paper on "The Obstetrical Significance of Retroversion and Retroflexion of the Uterus," which was a strong argument against the retention of the dorsal posture after childbirth. He declared that too many physicians insisted on keeping their patients on their backs too long after childbirth.

Dr. Carlton C. Frederick, Buffalo, said that, other things being normal, he never insisted on any particular attitude in bed, so long as the patient remained in bed, but that he was opposed to keeping patients in the dorsal position.

Cancer of the Lungs.

Dr. John Herr Musser, Philadelphia, President-elect of the American Medical Association, delivered the principal address of the afternoon, which dealt with the most recent conclusions and discoveries in relation to malignant disease of the lungs, and reported three cases of cancer of the lungs which had come under his observation, one of which bore a close similarity in its symptoms to tuberculosis. Dr. Frederick Holme Wiggin, New York City, president of the New York State Medical Association, accompanied Dr. Musser to Buffalo and participated in the discussion which followed his address.

Banquet.

A dinner was given at the Iroquois in the evening in honor of Dr. John Herr Musser of Philadelphia, President-elect of the American Medical Association, and Dr. Frederick Holme Wiggin of New York City, president of the New York State Medical Association. Dr. Allen A. Jones, Buffalo, was toastmaster, and informal addresses were made by the presidents of the Fourth District Branch Association, the New York State Medical Association and the American Medical Association.

NEBRASKA STATE MEDICAL SOCIETY.

Thirty-fifth Annual Meeting, held at Lincoln, April 28 to 30, 1903.

The President, Dr. Allen B. Anderson, Pawnee City, in the Chair.

Welcome.

Rev. H. C. Swearingen, Lincoln, welcomed the society on behalf of the city, and Dr. Robert C. McDonald, Fremont, responded for the society, thanking the citizens for the cordiality and sincerity of their welcome.

Reorganization.

The Committee on Reorganization recommended, by its chairman Dr. Alexander S. Von Mansfield, Ashland, adoption by the society of the constitution and by-laws suggested by the American Medical Association. Fifty-nine counties of a possible sixty-five made the necessary organization in anticipation of the reorganization. The state is divided into twelve councilor districts, containing the following counties:

No. 1.—Douglas and Sarpy.
No. 2.—Lancaster, Cass and Otoe.
No. 3.—Gage, Johnson, Nemaha, Pawnee and Richardson.
No. 4.—Knox, Cedar, Dixon, Dakota, Antelope, Pierce, Wayne, Thurston, Madison, Stanton and Cuming.
No. 5.—Burt, Washington, Dodge, Colfax, Platte, Boone, Nance and Merrick.
No. 6.—Saunders, Butler, Seward, Polk, York and Hamilton.
No. 7.—Clay, Fillmore, Saline, Nuckolls, Thayer and Jefferson.
No. 8.—Cherry, Keya Paha, Boyd, Brown, Rock, Holt, Grant, Hooker, Thomas, Blaine, Loup, Garfield and Wheeler.
No. 9.—Custer, Valley, Greely, Sherman, Howard, Dawson, Buffalo and Hall.
No. 10.—Gosper, Phelps, Adams, Furnas, Harlan, Franklin and Webster.
No. 11.—Red Willow, Hitchcock, Dundy, Chase, Hayes, Frontier, Lincoln, Perkins, Kieth, Arthur, McPherson and Logan.
No. 12.—Deuel, Sheridan, Dawes, Box Butte, Sioux, Scottsbluff, Banner, Kimball and Cheyenne.

The report of the committee and the new constitution and by-laws were adopted.

A scientific program of the usual number of papers was read and discussed. The society more than doubled its membership and the attendance was larger than any previous meeting.

Election of Officers.

Officers for the ensuing year were elected as follows: President, Dr. Benjamin F. Crummer, Omaha; vice-presidents, Drs. G. W. Shidler, York, and P. Emmett Plumb, Gothenburg; secretary, Dr A D Wilkinson Lincoln (re elected) corresponding secretary Dr H Winnett Orr, Lincoln (re elected), treasurer, Dr James L Greene, Asylum (re elected), and councilors first district—Dr Byron B Davis, Omaha second district—Dr. Albert R Mitchell Lincoln, third district—Dr. John W Bullard, Pawnee City and fourth district—Dr Edward Tanner, Battle Creek The other eight councilors hold over. Omaha was selected as the place of the meeting for 1904

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held May 5, 1903

The President Dr Wm Egbert Robertson, in the Chair

Treatment of Tapeworm

Dr Samuel P Gerhard read a paper in which he called attention to the three specimens which were most commonly met i e the beef tapeworm or *Tænia saginata* the pork tapeworm or *Tænia solium*, and the broad tapeworm or *Bothriocephalus* the former being the one most commonly met in this country He called attention to the necessity of thoroughly cooking the meat before it is eaten, which together with cleanliness on the part of those engaged in handling it and systematic and regular inspection of the cattle and the meat after it is in the market he believed would materially decrease the number of cases of this condition He remarked on the difficulty in removing the worm and considered that the treatment which was applicable to worms of one character was applicable to all The preparation of the patient prior to the administration of the remedy he considered a most important factor, the patient should be required to fast for twenty four hours before the medicine is administered, during which time the bowels should be thoroughly emptied by means of purgatives Among the drugs mentioned were the male fern the bark of the pomegranate, and its alkaloid pelletierin, the last two, however, are very unpalatable and may produce toxic effects in doses large enough to be effective Oil of turpentine, while formerly used to a great extent owing to its nauseating taste and difficulty of administration, has somewhat fallen into disuse Kamala is a very active drug, but its use is contraindicated, because it causes nausea and vomiting in many instances Powdered pumpkin seeds were thought to be a valuable and harmless remedy, especially in children He emphasized particularly the importance of removing the whole worm in all cases, for if the head or any of the segments remain it will develop again in from six to eight weeks He believed that the great drawback to the administration of many of the remedies was the very large dose required, being in some instances as much as a pint of a bitter nauseating liquid, to be taken at one or two draughts, necessitating loss of time, and being a very serious matter with a weak and debilitated patient

He reported a method which he had found very satisfactory The patient is instructed to thoroughly clean out the bowels by purgatives the day previous to the administration of the remedy In the morning as early as possible, a twenty grain capsule of *pelletierin tannate is given, and after this has oper*ated fully, which is usually in about two or three hours, the following prescription is administered:

℞ Olei resinæ aspidii
Etheris, āā ʒii
Hydrargyri chloridi mitis gr xii

This is divided into sixteen capsules and one given every ten minutes, no food being taken In about two or three hours the worm will be expelled whole, with its head intact He stated that he had recently employed this method in seven cases, with very satisfactory results, the depression is generally very slight and does not last longer than two or three hours, and if it does exist light food can be administered after the worm is expelled

Dr L Napoleon Boston gave a microscopic exhibition of intestinal parasites, consisting of the beef worm, trichina, echinococcus and ankylostoma

DISCUSSION.

Dr A C Morgan stated that he had used the remedies recommended with very satisfactory results He believed that a positive diagnosis of tapeworm should not be made unless the segments were found in the stool, although the larvæ are not discoverable there He referred to the predisposition of the embryo of various worms to lodge in the pectoral muscles, the biceps, the diaphragm and particularly under the tongue, and in a patient suffering from what is apparently muscular rheumatism, but in reality larvæ, there will be irregular temperature, some fever and increased pulse Interference with the action of the diaphragm, tenderness of the various muscles and symptoms of pleurisy are also important diagnostic symptoms He believed that the oil of turpentine was contraindicated, if the kidneys were not in perfect working order

Dr. Samuel Wolfe referred to the difficulty of diagnosis of this condition, as the various forms of intestinal parasites do not give rise to particular symptoms, and the conclusion can probably only be positively reached after seeing a worm, and the condition may exist for a considerable time without any being passed He felt that they were more apt to occur during some acute infectious disease, or some decided constitutional disturbance, especially when the disease has assumed the malignant form, he having observed in several instances during the infection that worms were passed in very large numbers In cases of tapeworm, he believed, if the worm was of any size, segments would usually be discoverable in the stools

Dr. Luther C Peter attributed poisonous effects to the castor oil which was administered in most cases

Dr Gibbon reported the case of a child who, during the three or four months previous to the passing of segments, had been given raw Hamburg steak He also referred to a case which had come under his observation in the Children's Hospital, where a child was seized with coughing and the nurse removed one or two large worms from its mouth He believed that the migration of the worms was particularly common in typhoid fever, in some cases causing the perforation

Dr Harry Lowenburg reported the case of a Polish child who was brought to him a short time ago suffering from hematemesis Being familiar with the fact that these people fed their children on raw pork, he at once administered an emetic, which was followed by the vomiting of a large round worm, about four inches long, after which all the symptoms disappeared

Dr Charlott reported the case of a girl operated on in the German Hospital, after which she vomited a large number of worms

Dr. Arthur P Hitchens suggested the possibility of the remedy being absorbed before it reached the intestinal tract unless it was given in capsule form, which method he believed would be the most efficient

Dr. Wm. Egbert Robertson recommended the more frequent examination of the stools, which he believed would lead to the detection of the ova of the round worm in many instances While the flat worm is rare in children, he referred to a case reported by Dr D J Milton Miller, occurring in a child eight months old, who was supposed to be infected by feeding it on expressed beef juice

Dr L Napoleon Boston stated that in cases of trichina there is always a swelling and pain in the frontal region He believed that the *Oxyuris vermicularis* was quite as common in adults as in children, and while the habits of the patient may have had a great deal to do with its occurrence, he did not feel that the social class had Examination of the rectal mucus prior to the commencement of treatment was recommended in all cases

Dr Samuel P Gerhard believed that many cases were diagnosed as *Tænia solium*, which in reality were worms of a different character He believed that the reason this condition was not so prevalent in this country was due to the fact that people had been taught to cook pork thoroughly, while they eat raw beef, which accounts for the more frequent occurrence of that variety. Ether he believed to be of value, as it tended to stupify the worm, and in that way facilitate its removal, and he also felt that it was important that the worm should be passed into a vessel of warm water, for if the temperature is lower than that of the intestinal tract it is liable to recede

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

The Nitrites and Nitroglycerin.

There are probably no preparations which more certainly produce positive results when administered than do amyl nitrite and nitroglycerin. The physiologic action of these preparations is similar, such as producing fulness in the head, flushing of the face, a general dilatation of the peripheral vessels and acceleration of the pulse and respiration. As a result of this arterial dilatation the blood pressure is lowered.

These preparations are of great value in the treatment of angina pectoris to relieve the arterial spasm either by inhaling the amyl nitrite dispensed in pearls or by the internal administration of nitroglycerin. The latter preparation is of service in relieving the labor of the heart, which has already undergone great changes in chronic interstitial nephritis. Under such circumstances the marked arterial tension so characteristic of this disease is greatly lowered and the labor of the left heart decreased. Nitroglycerin is also of service in some cases of pneumonia where digitalis is indicated, in order to counteract the effects of the latter preparations on the peripheral circulation. In other words, it should be remembered that the nitrites are only indirect heart stimulants owing to the fact that they decrease the labor of the heart by lessening the resistance in the arterial rather than by stimulating the heart muscle, as does digitalis. So that in those conditions accompanied by high aortic resistance they can be employed to advantage.

In asthmatic attacks accompanied by spasm of the bronchioles relief is promptly given by the nitrites.

In cerebral hemorrhage it is supposed to decrease the tendency to greater hemorrhage by so dilating the visceral blood vessels as to decrease the blood pressure in the cerebral circulation. In cirrhotic kidney the following combination was a favorite of Da Costa:

℞.	Nitroglycerini	gr. 1/100	0006
	Tinct. digitalis		
	Tinct. strophanthi, āā	m. ii	12
	Tinct. belladonnæ	m. ss	03

M. Ft. cap. No. i. Sig.: Take one such every six hours.

In asthma the following combination containing glonoin is recommended by Hare:

℞.	Pot. iodidi		
	Sod. brom., āā	gr. iii	20
	Nitroglycerini	gr. 1/150	00045
	Tinct. lobeliæ	m. ii	12

M. Ft. tabella No. i. Sig.: One such four or five times a day.

The following containing sodium nitrite is also of service in *asthma:*

℞.	*Chloralis hydratis*	ʒiii	12
	Sodii nitritis	ʒss	2
	Tinct. stramonii	ʒi	4
	Syr. *glycyrrhizæ q. s. ad*	℥ii	60

M. *Sig.:* One teaspoonful every four hours.

The following combinations containing powdered niter is recommended to relieve asthmatic attacks:

℞.	Stramonii flores	ʒii	8
	Cannabis ind. flor.	ʒiss	6
	Pulv. niter	℥iss	45
	Olei eucalyptus	ʒss	2

M. Ft. pulvis. Sig.: *Place one teaspoonful in* a saucer and burn in the patient's room; or:

℞.	Stramonii flores.	℥i	30
	Pulv. niter	℥ss	15

M. Sig.: Small amount to be placed on a plate and burned.

Amyl nitrite, potassium nitrite and nitroglycerin have been used with some success in relieving the attack of epilepsy.

Chorea.

D. H. Crawford, in *Cleve. Med. and Surg. Rep.*, recommends, in the treatment of chorea, that the child be taken from school and be protected from all exciting influences that would aggravate the functional derangement of the nervous system. *Mild* exercise is beneficial and plenty of fresh air. In the graver cases the patient should be *put to bed and placed on a good* nutritious diet. He recommends cod-liver oil, milk, eggs and vegetables. Meat should be prohibited. Massage is of service in chronic cases. The author states he has derived the best *results, in a medicinal way, from agaracin.*

However, he has used with advantage, arsenic, stramonium, hyoscyamus and belladonna. The latter preparation is indicated where there are conditions of great mental excitement, and in the delirium approaching a maniacal state.

Bjorkman, in Merck's Archives, states that where rheumatic symptoms accompany the chorea and acute endocarditis is not present, excellent results may be obtained by the following:

℞.	Sodii salicyl.	ʒiiss	10
	Syr. rubi *idaei*	℥iss	50
	Aq. destil. q. s. ad	*℥viii*	*240*

M. Sig.: One dessertspoonful five times daily the first day; *four dessertspoonfuls* the second day, and three the next, etc. *The foregoing dose is for a child five years of age.*

Besides the administration of arsenic in the form of Fowler's solution, which the author ranks first among medicinal agents, he states that the digestive tract demands especial attention. Purgatives should be used freely, either castor oil or salines. As *an intestinal antiseptic salol is recommended in 2 to 5* grain (.12-.30) doses.

Iron is of value combined with arsenic as follows:

℞.	*Liq.* potassii arsenitis	ʒi	4
	Syr. ferri iodidi	℥i	*30*

M. Sig.: Ten to thirty drops in water three times a day, gradually increasing the dose; or:

℞.	Tinct. *ferri chloridi*	ʒvi	24
	Liq. potassii arsenitis	m. lxxx	5|30

M. Sig.: Twelve to twenty drops after meals, well diluted.

Hammond recommends the bromid of zinc as follows:

℞.	Zinci bromidi	ʒi	4
	Syr. simplicis	℥i	30

M. Sig.: Ten drops three times a day, increased as rapidly as the stomach can bear it.

Following combination has been employed with good results:

℞.	Zinci valerianatis		
	Ext. hyoscyami		
	Bismuthi subnit., āā	gr. xv	1

M. Ft. cap. No. xxv. Sig.: Three to six capsules daily.

Or a combination *of arsenic and chloral as follows:*

℞.	Liq. pot. arsenitis	m. iii	20
	Chloralis hydratis	gr. v	30
	Aq. menth. pip. q. s. ad	ʒi	4

M. Sig.: At one dose, to be repeated after each meal.

Medicolegal.

Privilege in Suicide Case and When No Doctor Wanted.—The New York case of Meyer vs. Supreme Lodge, Knights of Pythias, was brought to recover on a fraternal mutual benefit certificate. The defense was that the insured had committed suicide, which, by the terms of the certificate, rendered it null and void. To aid in establishing this defense, it was sought to introduce the testimony of three physicians who attended the insured, as to *declarations concerning* the cause of his death, made by him in their presence. One of the physicians was summoned to attend him in one of the rooms of a hotel; one was the house physician of a hospital who examined and treated him after he had been removed there; *and* the other was the junior surgeon of the hospital, who had assisted the house physician in the examination and treatment of the case. There was no evidence that the insured employed any one of these physicians, but, the Second Appellate Division of the Supreme Court of New York *says, it was none* the less true that they attended him in no other than a professional capacity. And thus was raised the question whether Sections 834 and 836 of the New York Code of Civil Procedure relate to cases where physicians professionally *attend a* patient who does not voluntarily require their services. Section 834 forbids any physician "to disclose any information which he acquired in attending a patient, in a professional capacity, and which was necessary to enable him to act in that capacity." The language, the court says, is broad enough to cover cases of medical attendance, whether such attendance results from the voluntary call of the patient on a physician or from the exigencies of the patient's situation. If the relation is that of a physician attending a patient in a professional capacity, no matter how the relation was brought about, the sections apply. Section 836 provides that Section 834 applies to any examination of the physician, "unless the provisions thereof are expressly waived on the trial or examination . . . by the patient. . . . But a physician . . . may, on a trial or examination, disclose any information as to the mental or physical condition of a patient who is deceased, which he acquired in attending such patients professionally, except confidential communications and such facts as would tend to disgrace the memory of the patient, when the provisions of Section 834 have been expressly waived on such trial or examination by the personal representatives of the deceased patient." The record, the court says, showed that the party suing did not waive the privilege either on the trial or examination of any of the physicians; and even where the personal representatives waive the privilege, the physician is forbidden to disclose any fact which would tend to disgrace the memory of the patient. It could hardly be said that a declaration of the insured that he had attempted suicide would not tend to disgrace his memory. Wherefore, the court holds that there was no error in the exclusion of the testimony in question.

Dying Declarations and Privilege in Abortion Case.—The Supreme Court of Indiana says, in Seifert vs. State, that it was not disputed that dying declarations are competent in prosecutions for causing death by criminal abortions, the element of death being a substantive part of the charge. Such declarations are admitted on the ground of necessity. The necessity, however, does not depend on the stress of the particular case, but on the fact that ordinarily there is no other equally satisfactory proof of the circumstances connected with the fatal injury. Dying declarations being an exception to the rule excluding hearsay testimony, the above consideration marks, in a general way, the extent of the exception. The theory of the state in this case was that the accused furnished the deceased with a catheter, and incited her to use it to produce a criminal abortion. The court can not consent to the view that the dying declarations must be confined to the time when the deceased committed the act that resulted in an abortion, for that would leave the accused out of view entirely. The furnishing of the instrument and the inciting of the deceased to commit an abortion were as central and vital elements in the case as was the act of the deceased. In holding that declarations concerning all of these elements were proper, the court thinks that it is fully within the rule that the circumstances of the death must be the subject of the dying declaration. The statements of the deceased in her dying declarations were open to contradiction; and on the trial of the case the accused sought to contradict the portions of the dying declarations that incriminated him by the testimony of a physician as to statements that the deceased had made to him. Now, it is provided by the Indiana statute that "the following persons shall not be competent witnesses: . . . Fourth. Physicians as to matter communicated to them as such by patients in the course of their professional business or advice given in such cases." But the court thinks that, notwithstanding the broad language of the enactment, a request to a physician to commit a crime is not privileged. In this case, the matter of difficulty was the segregation of competent from incompetent evidence of the physician. If the deceased requested the physician to commit a criminal abortion on her person, as the offer to prove tended to show, that fact could have been developed, the court says, as a proper introductory fact, and that would have furnished the basis for a showing in a negative way that the proper subject on which professional advice had been sought had no relation to an abortion, and was no longer under discussion. This being shown, it would prima facie appear that the balance of the conversation was not privileged. The statute under consideration is highly beneficent in its operation, and it should not be frittered away by permitting the answering of questions which tend to reveal that which should be kept inviolate. All doubtful points must be solved against the competency of the proposed testimony, but if counsel, by a line of questions, can develop the isolated point, concerning which the court can say, this is competent, and at the same time avoid the disclosure of that which should be kept sacred, it is his privilege to pursue that course. Where, after the deceased had, in a measure, recovered from the illness occasioned by the abortion, the same physician who had performed proper professional service in an effort to relieve her from the consequences of such abortion called upon her to collect the amount of his bill, the court thinks that it would be a perversion of the statute to hold that a statement then made to him that the accused had nothing to do with her condition and would not pay a dollar was privileged.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

June 20.

1 *Sudden Death and Unexpected Death in Early Life, with Especial Reference to the So-called Thymus Death. J. P. Crozer-Griffith.
2 *The Toilet of the Peritoneum in Appendicitis. G. R. Fowler.
3 *The Anatomy of the Pancreas. Eugene L. Opie.
4 Management of Malignant Disease of the Uterus. George Erety Shoemaker.
4½ Chlorosis. S. H. Rosenthal.
5 *A New Method of Treatment for Chronic Anterior Urethritis and for the Declining Stage of Acute Urethritis. William W. Townsend.
6 Man's Responsibility in Sterile Marriages. W. H. Prioleau.

1. **Sudden Death in Early Life.**—Griffith reviews the causes of sudden death which may occur in children, with special reference to the effect of the thymus in producing these accidents. It was very early observed that the thymus was often enlarged in such cases of sudden death and the mechanical theory has often been given as an explanation. The author reviews the theories, showing the difficulties of the mechanical theory, the comparatively small circulation of the gland, the fact that sudden death may occur without its enlargement, etc. As regards the possible hyperthymization of the blood or some other form of autointoxication arising from a hyperplastic gland, as suggested by Escherich, he finds no clinical evidence whatever for its support, but one fact does stand out, that there is a certain constitutional anomaly seen in some children, and even in adults, which predisposes to sudden death from trivial causes. Whether enlargement of the thymus or other lymphatic tissues is coexistent is uncertain. The disturbance depends on a state of faulty nutrition, some fault of the metabolism, attended by pathologic disturbance of the nervous centers, causing extreme irritability, involving the nervous supply of the heart and respiration. The final sudden exitus appears, however, not to be due to spasm of the larynx, though it may appear to be so, but to a sudden cardiac paralysis. In the cases he gives the heart ceased to beat at the beginning of the attack. There may be, however, a central involvement of respiration occurring and ending fatally. Other causes of sudden death are convulsions, hyperpyrexia in various diseases, congenital syphilis, rupture of caseous glands or abscesses and various malformations.

2. See abstract in The Journal, xl, p. 1594.

3. **The Pancreas.**—Opie describes the anatomy of the pancreas and its anomalies. He explains the aberrant pancreatic glands, not by the presence of accessory embryonic structures necessarily, but, as in the case he reports, by entanglement of a lateral branch of the pancreatic duct in mesoblastic layers. It is, by longitudinal growth of the intestine, transported a variable distance from the pancreas, and a new duct forms in much the same way that pancreatic ducts are regenerated after section. He insists on two anatomic peculiarities which do not receive the attention that they deserve. One is that the organ consists of two functionally diverse elements on the

one hand, cells which supply to the intestine important digestive ferments, and on the other hand, cells having no communication with the ducts of the gland, but in intimate relation to the blood vessels. The other is that the close anatomic relation of the pancreatic duct to the common bile duct favors the transmission of morbid processes from the liver and bile passages to the pancreas.

5. **Urethritis.**—The method of treatment described by Townsend consists in the use of a perforated glass rod bent at right angles with a double canal, one running through from the proximal end to the air chamber at its distal termination and another above it backward from the latter to an outlet near the point of flexure. The distal end of the air chamber is open, excepting when it is closed by the urethral walls. A powder insufflated into the tube passes through the lower canal to the air chamber and is distributed on the urethral wall at this point. As the powder is forced into the insufflator the tube is gradually withdrawn and the mucous membrane of the urethra is consequently covered. It is readily sterilized by boiling and drying in an alcohol flame when the water has been entirely shaken out. He uses astringent and antiseptic drugs, aristol prior to applying an astringent, if there is much pus accumulation. In his experience zinc, copper and aristol have accomplished the desired effects. He uses three or four treatments a week. He recommends this method in chronic anterior urethritis and the declining stages of the acute disorder, but never in the early stages of the condition.

Medical Record, New York.

June 20.

7 *Infantile Insanity in Its Relation to Moral Perversion and Crime. Allan McLane Hamilton.
8 *Gastric and Intestinal Crises. C. A. Ewald.
9 *Intravenous Infusion in Puerperal Septicemia. Edward Waltzfelder.
10 *The Correlation of Alcolism, Crime and Insanity. C. A. Drew.
11 The Medical Officer of the United States Navy. Gilbert T. McMaster.

7. **Infantile Insanity.**—Hamilton discusses the forms of insanity that occur in children; especially those with criminal tendencies, illustrating them by various examples, such as the Jesse Pomeroy case and others. He thinks an error is made in considering children's weaknesses that are not insanity as responsible crime and suffering them to be sent to penal institutions and idiot asylums when they might be properly guided and educated out of their tendencies. The hope for relief is in correctional institutions where children are not stamped as young felons, such as farms and trade schools, training ships and so on. He thinks the government regulation of newspapers and injurious publications should be brought about, as they are largely influential in producing juvenile criminality.

8. **Gastric and Intestinal Crises.**—Ewald first notices the well-known gastric crises of tabes and also describes some conditions occurring independently of tabetic disease, but closely resembling those due to this cause. There may be nothing typical about the time of these attacks, or they may present a peculiar type of their own, recurring with regularity at rare intervals. There are no specific signs present pointing to a disease of the spinal cord, but neurasthenic or hysterical symptoms are usually prominent. These attacks are generally brought about by the partaking of food, and it frequently happens that the same articles of food may precipitate an attack at one time and not at another. The so-called idiopathic crises, moreover, may be influenced therapeutically, which is hardly ever the case with true tabetic crises. He points out how errors of diagnosis may lead to useless operations for lesions which do not exist. In cases due to disease of the central nervous system not much can be done; there is no way of cutting short the attack. Suggestion may have considerable influence in some cases, but reliable treatment is wanting. In grave cases he makes use of morphin. In the beginning it is possible to check the attack with small doses, but they will have to be increased later. There is danger of making morphinomaniacs. The method of Corning, recently tried by Chatelin, injecting local anesthetics into the epidural space of the spinal cord from the sacrum, seems to have some good effects. Technically the process is simple and easy. Cases of periodic vomiting due to functional neuroses, i. e., idiopathic vomiting, are much more satisfactory than those of gastric and other crises due to organic changes in the central nervous system. General tonic treatment by hygienic and dietetic measures, irrigations of the stomach with soothing or slightly astringent solutions, sedatives, such as the bromides, hyoscyamus, etc., and if vomiting is of reflex origin, painting the nasal mucous membrane with cocain are usually of value.

9. **Puerperal Septicemia.**—Two cases of puerperal septicemia treated by intravenous infusions of decinormal salt solution with good results are reported by Waitzfelder. In one case formalin infusions were first used, but after forty-eight hours another injection was required and decinormal solution was given with perfectly identical results.

10. **Alcohol in Crime and Insanity.**—Drew finds that in 154 cases admitted in two years to the Massachusetts State Asylum for Insane Criminals, 11, or 7 per cent., claimed never to have used alcohol as a beverage. Of these 11, 3 were epileptics and 2 were well-marked cases of imbecility. Ninety-six, or 62 per cent., were hard drinkers. The remaining 31 per cent. considered themselves only moderate drinkers, or were too demented to tell, or for personal reasons refused to give information. Fifty-six, or 36 per cent., acknowledged intemperate fathers, while 21, or less than 14 per cent., acknowledged intemperate mothers. In the 4,437 admissions to the other five state hospitals the cause of insanity in 14.88 per cent. was given as intemperance. These statistics, however, are not altogether reliable, as there is a great tendency to withhold facts. In the Worcester Asylum a careful investigation seemed to show that alcohol was the sufficient cause of insanity in 21 per cent. of the men and 7 per cent. of the women, and a causal factor in about 10 per cent. of the women and 32 per cent. of the men. Poverty, overwork, stress, worry, blighted hopes and consequent ill health following inebriety are not credited to alcohol in these statistics. If these so-called moral and mental causes were traced back the proportion of insanity charged to alcoholism might be much more equal between men and women.

Boston Medical and Surgical Journal.

June 18.

12 *The Need of an Institution for the Education of Nurses Independent of the Hospitals. Francis P. Denny.
13 *Hemostasis by Compression and Heat. John W. Keefe.
14 *Polioencephalomyelitis and Allied Conditions. (Concluded.) E. W. Taylor.
15 A Case of Paget's Disease of the Nipple Treated by the X-Ray. Edith R. Meek.

12. **Trained Nurses.**—Denny pleads for the education of nurses, in part at least, outside of the hospital. The theoretical work and whatever requires study can not be accomplished on account of the pressure of duties. He would have an institution to give the preliminary course of instruction, and a single plant—the same corps of teachers, the same lecture rooms and laboratories—could provide for a number of different hospitals.

13. **Hemostasis.**—Keefe reports cases in addition to those in a former article published in the *Boston Medical and Surgical Journal* of January 8, of the use of Downes' electrothermic angiotribe, which he considers of decided practical value. No secondary hemorrhage is reported to have taken place. The most interesting case was one of resection of 14 inches of the intestine in a man, showing the case with which the bowel can be resected. The perfect asepsis, he says, is certain to eliminate the mechanical appliances now in use for this purpose. The wide range of usefulness of this instrument renders a surgical outfit incomplete without it. The advantages claimed for the electrothermic angiotribe are: the exclusion of the ligature; hemostasis *en masse* or of isolated blood vessels; aseptic gastrectomy, gastro-enterostomy and resection of intestine; appendectomy; salpingectomy; extrusion of septic material during operation being rendered impossible; sterile occlusion of the Fallopian tube; absence of irritable and painful stumps; less tendency to post-operative adhesions; rapidity of operation; no secondary hemorrhage from slipping of ligatures, or suppurating sinuses due to ligatures; less pain subsequent to operation, and there is no puckering or

dragging on the tissues; value in removal of cancer as there can be no danger of inoculation with cancerous material during the operation, and the heat destroys the cancer cells beyond the point of application of the clamps.

14. **Polieneephalomyelitis.**—In the concluding instalment of his article Taylor offers the following conclusions, which he considers legitimate:

> That a large group of affections of the central nervous system exists, provisionally to be regarded as inflammatory, in which may be included encephalitis, poliencephalitis, superior and inferior, poliencephalomyelitis, poliomyelitis, encephalomyelitis and, with reservations, Landry's paralysis, and possibly myasthenia gravis, and certain apparent peripheral nerve infections
>
> That these affections should be regarded as essentially identical, differing only in symptomatic expression.
>
> That the evidence for this lies in the simultaneous involvement in individual cases of various portions of the nervous system, a notable example of which is given in poliencephalomyelitis.
>
> That we should gain in our understanding of these and various other affections of the nervous system if we adopted a classification based on pathologic alterations and on etiology, wherever possible, rather than on clinical symptoms determined by anatomic subdivisions.
>
> That, admitting a somewhat definite pathologic alteration of the nature of inflammation, as a fairly constant factor, we may assume the existence of a common exciting, probably toxic, cause.
>
> That the nature of this cause is practically unknown, that its manifestations are not always uniform and that our final understanding of the distribution and prognosis of these affections must depend, first, on our knowledge of these exciting causes, and, second, on the nature of individual susceptibility and resistance.

Medical News, New York.

June 20.

16 *The Need of Public Toilets in American Cities Edward H. Williams.
17 *The Morbid Anatomy and Pathology of Tabes. (Continued.) Joseph Collins.
18 The Proper Recognition of Electrotherapeutics A. R. Rainear.
19 *A Contribution to the Pathology and Prognosis of the Diseases of the Bladder. Robert Holmes Greene and Harlow Brooks.
20 Impressions of the Non-heredity of Acquired Characters. A Rejoinder. Lawrence Irwell.

16. **Public Toilets.**—Williams pleads for the establishment in American cities of public conveniences such as exist in London, Paris and elsewhere and illustrates his article with pictures of such as are in use abroad.

17. **Tabes.**—The pathology of tabes is discussed at length by Collins, who thinks that evidence tends to show that the essential lesion is in the elective progressive degeneration, segmentary in type (in contradistinction to Wallerian), of the posterior columns of the spinal cord. The distribution of the degeneration corresponds with the intraspinal distribution of the posterior root-fibers. After the degenerative process has existed for an indefinite time in the cord, the endogenous fibers of the posterior columns are involved. This changes the anatomic picture and the confines of the pathologic process. In most cases of tabes of long duration pathologic alterations have been found in other portions of the nervous system. He would therefore adopt the theory of Marie and Guillain and hold that the lesions of tabes are the results of the activity of a poison, generated by syphilis, acting primarily on the intramedullary distribution of the posterior roots.

19. **Diseases of the Bladder.**—The following are the conclusions of Greene and Brooks' article:

> 1. The most frequent cause of diseases of the bladder is: (*a*) Lesions of the central nervous system, causing dilation, (*b*) septic processes of various varieties, (*c*) hypertrophy of the prostate.
>
> 2. In all conditions in which the spinal cord or central nervous system is involved, frequent and early catheterizations should be resorted to, to prevent the bad effects of overdistention or the possibility of cystic rupture.
>
> 3. Conditions of the bladder must greatly modify the prognosis in operative procedures for the relief of obstructions of the urinary flow, therefore the importance of cystoscopic and other examinations can not be too strongly insisted on.
>
> 4. Hypertrophy of the bladder wall is due to four different processes, separate or combined: (*a*) Inflammatory infiltration, (*b*) increase of the fibrous connected tissue, (*c*) smooth muscle hyperplasia, (*d*) infiltration by new growth. The clinical symptoms in hypertrophy of the bladder depend on which of these factors predominate.

New York Medical Journal and Philadelphia Medical Journal.

June 20.

21 *A Scalp-face. A New Plastic Operation. N. Senn.
22 *Whooping Cough. A New Method of Treatment. Theron W. Kilmer.
23 The Use of the X-Ray in the Exact Localization of a Foreign Body. L. D. Weiss.
24 Treatment of the Common Clinical Forms of Gonorrhea in the Female. R. Oliver Kevin.
25 Pertussis with Unusual Cerebral Symptoms. Edwin E. Graham.

21. **A New Plastic Operation.**—Senn describes the manufacture of a face in a case where a large portion of the normal face had been eaten away by a caustic application. It was made by the transfer of about one-half the scalp down over the face and the results were an improvement. Thirteen different operations were required to complete the work.

22. **Whooping Cough.**—In the treatment of whooping cough, Kilmer recommends the wearing of an elastic belt over the abdomen or thorax, or both, as the case may be, to control the tendency to vomiting, combined with the alternate use of antipyrin with the bromids and quinin, as recommended by Kerley. He holds that whooping cough is a self-limited disease and runs its course in the same way as pneumonia, but that these methods are palliative and curative as far as any methods that have been employed.

Cincinnati Lancet-Clinic.

June 20.

26 President's Address, Ohio State Medical Association. W. C. Chapman.
27 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.
28 Post-Nasal Catarrh. F. W. Davis.
29 Differential Diagnosis of Appendicitis. H. G. Marxmiller.

St. Louis Medical Review.

June 13.

30 Home and Sanatorium Treatment of Tuberculosis. William Porter.
31 Prevention of Tuberculosis. George Homan.
32 Prevention of Tuberculosis. Carl Fisch.

Annals of Gynecology and Pediatry, Boston.

June.

33 Neuroses Dependent on Prolapse of the Kidney. Augustin H. Goelet.
34 *Puerperal Eclampsia. A Plea for Treatment with Veratrum Viride. J. S. Hammond.
35 Contribution to Renal Pathology and Etiology. Henry Jacobson.

34. **Eclampsia.**—Hammond advocates veratrum as a drug *par excellence* in puerperal eclampsia, both on account of its action on the circulation and arterial tension and as a spinal depressant agent and obtunder of the nervous centers generally. The emesis it provokes helps in elimination and excites the excretion of bile. It also eliminates by diaphoresis. It is not contraindicated in any form of kidney disease, and it is much safer than chloral, which is not eliminative. He holds that it has not been given a fair trial by obstetricians. It should be given in doses to reduce the pulse to sixty or below and hold it there.

Medical Herald, St. Joseph, Mo.

June.

36 *Hereditary Syphilis. Richard C. Moore.
37 *Syphilitic Immunity and Second Infection in Syphilis. A. C. Stokes.
38 Syphilis of the Nervous System. F. E. Coulter.
39 Diagnosis and Management of Syphilis. M. E. Silver.
40 Congenital Syphilis in the New-born and Young Infants. Mary Strong.
41 The Syphilitic Affections of the Eye. H. B. Lemere.
42 The Microscope in the Practice of Medicine. W. Francis Mitchell.

36. **Hereditary Syphilis.**—Moore, from the facts as far as known, concludes that the father can infect the embryo through the spermatozoa and the mother at the time of conception through the unimpregnated ovum. Moreover, if she contracts syphilis within the first seven months of pregnancy she is liable to infect the fetus. As regards marriage, syphilis is not transmissible after four to seven years without treatment and with treatment, after three and one-half to four years after the disappearance of secondary symptoms, to which must be added six months without treatment and without symptoms. He would authorize marriage after these periods. In inherited syphilis in a child the condition will depend on the severity of the disease in the parents, being more severe when both are infected than when only one is. The more recent the disease in parent the more severe in the child. Specific treatment of the parents has an effect on the grade of the symptoms in the fetus. A large proportion of children of syphilitic parents are defective, about one-third are stillborn and abortions are frequent.

37. **Syphilitic Immunity.**—From a study of the subject and from correspondence, Stokes concludes that second infection may occur in syphilis about as often as in smallpox or measles,

say once in 2,500 cases. He finds no case on record where it occurred in less than two years after the appearance of the secondary symptoms of the first attack. Usually the immunity lasts for life. Colles' and Profeta's laws are no exception to Ehrlich's hypothesis of immunity. The second infection is more frequent in hereditary than in acquired syphilis.

Medical and Surgical Monitor, Indianapolis.

June 15.

43 On the Surgery of the Hypertrophied Prostate. Bransford Lewis.
44 Some Elements to be Considered in Urinalysis. Microscopy. J. W. Crismond.
45 Gersuny's Operation for Saddle-back Nose. Joseph R. Eastman.
46 The Relation of Blood Pressure to Shock. Charles R. Sowder.

Journal of Nervous and Mental Disease, New York.

June.

47 Presidential Address, American Neurological Association. J. W. Putnam.
48 *Tabes and Muscular Atrophy. Joseph Collins.
49 *Contribution to the Study of the Achilles-jerk and the Front-tap. G. L. Walton and W. E. Paul.
50 Three Cases of Progressive Muscular Dystrophy Occurring in the Male Members of a Single Family, and Commencing at the Same Age in Each. C. H. Bunting.
51 Remarks on Primary Neurotic Atrophy (Charcot-Marie-Hoffman Type), with Report of a Case in Which There Was Excessive Indulgence in Tea and Coffee. Alfred Gordon.

48. Tabes and Muscular Atrophy.—Collins reports cases where tabes was complicated with muscular atrophy and studies the pathology. The first case was one of tabes with atrophy of neural origin, the lesions of the peripheral nerves being a degenerative neuritis. The tabes was not typical. The second case had been called syringomyelia by certain persons referring to it, a diagnosis for which the author sees no grounds. He thinks the most legitimate interpretation to be put on it is that the cause of the atrophy was a multiple neuritis probably of alcoholic origin. The third case showed apparently no symptoms of tabes until a careful examination revealed them. The muscular atrophy might either be dependent on a peripheral lesion, such as a neuritis, or due to a thrombosis of the cornual branch of the anterior spinal artery. He notices some cases reported by others.

49. The Achilles-Jerk and the Front-Tap.—The conclusions reached by Walton and Paul are that the Achilles-jerk is as constant in health as the knee-jerk, and varies less and is the most easily elicited and uniform of all tendon reflexes. It usually disappears early in tabes and is as diagnostic as the knee-jerk. The enfeeblement of the latter on one side or both may be due to prior toxic influence, as diphtheria. This may also be true of the Achilles-jerk. The front tap, which is made by tapping the tibialis anticus while the foot is flexed dorsally, thus producing plantar tension, is generally present bilaterally and in about 40 per cent. of normal individuals, in some very active. Its presence alone does not establish disease or indicate excessive irritability. In organic disease it is generally increased with the other reflexes in hypertonic, and decreased in hypotonic states. He has found it present in about 71 per cent. of cases of functional neuroses and in 75 per cent. of epileptics. Both of these reflexes deserve to be put on the list of routine tests for purposes of diagnosis, but this is particularly true of the Achilles reflex.

University of Pennsylvania Medical Bulletin, Philadelphia.

June.

52 *An Experimental Study on the Regeneration of Posterior Spinal Roots. William G. Spiller and Charles H. Frazier.
53 *A Note on the Histology of Vernal Conjunctivitis (Fruehjahr's Catarrh). G. E. de Schweinitz and E. A. Shumway.
54 *Note on the Agglutination* and Pathogenicity of the Bacillus Subtilis. S. S. Kneass and Joseph Sailer.
55 Partial Paralysis of One Upper Limb, Resulting from a Vascular Lesion of the Lateral Column and Anterior Horn on the Corresponding Side of the Spinal Cord. William G. Spiller and Theodore H. Weisenburg.
56 An Adjustable Anatomical Table. Gwilym G. Davis.
57 A Case of Colon Infection Simulating Typhoid Fever. Joseph Evans.
58 Fat Crystals in the Spinal Cord. Daniel J. McCarthy.
59 *A Contribution to the Chemical Pathology of Acromegaly. David L. Edsall and Caspar W. Miller.
60 Karyokinesis in the Macroblast. C. Y. White.

52. Regeneration of the Posterior Spinal Roots.—Spiller and Frazier have experimented on dogs, performing laminectomy and exposing and dividing the posterior roots of three spinal segments about 1.5 cm. from their point of entrance into the dura; the divided ends of the lowermost three were brought into apposition by a silk suture. The other two remained in apposition without any artificial means. In the only successful case the dog was killed ten months after operation and the spinal cord removed and studied microscopically. They found the intramedullary portions of the roots operated on entirely degenerated and no young nerve fibers anywhere in the usual distribution of the posterior roots within the cord. The conditions for regeneration were made as favorable as possible, but it did not occur. They think their experiment is rather conclusive, though they regret that more animals did not survive to corroborate the results.

53. Spring Catarrh.—A case of this disease is reported by de Schweinitz and Shumway with microscopic examination of the excised tissue of the growths from the superior tarsal conjunctiva. Their findings correspond with the description of the growths by Vetsch, Horner, Uhthoff, Knies, Taylor, Schoebl, Haab and Fuchs. Neither epithelium nor connective tissue elements especially predominated in the specimens, as each constituted a definite portion of the new growth.

59. Acromegaly.—Edsall and Miller have experimented on the nutrition and elimination of two cases of acromegaly, giving reports in detail. Their findings seem to show that there is in acromegaly a growth of abnormal bone rather than an abnormal growth of bone, and that there are very marked abnormalities in the soft tissues as well as the bones. The alteration in the bone is the result of metabolic abnormalities rather than a mere tendency to distorted overgrowth.

Maryland Medical Journal, Baltimore.

June.

61 *A Further Investigation of the Milk Supply of Baltimore, with Especial Reference to Its Suitability for Infant Feeding. Edwin H. Schorer and Victor H. Bassett.
62 Some Remarks on a New Modification of the Bottini Operation. W. B. Wolf.
63 Method of Instruction in Surgical Pathology. J. C. Bloodgood.

61. The Milk Supply of Baltimore.—Schorer and Bassett have investigated the milk supply of Baltimore, both at the dairies and retailers, and find that it is very generally adulterated by water and that preservatives are so common that a large proportion of the milk sold should be considered unsuitable for infant feeding. Adulteration, they think, occurs largely in the hands of retailers. The bacterial count and acidity test are satisfactory means of determining the suitability of milk for infant feeding and are of greater value than the ordinary physical and chemical tests. The standard proposed by Park, that of 500,000 bacteria per c.c. at the receiving stations and 1,000,000 in milk offered for sale, are practicable standards for Baltimore, and can be met by moderate care in the production of milk, and refrigeration later. With slightly improved conditions a number of the better dairies could supply milk which could be certified and contain less than 100,000 bacteria per c.c.

St. Louis Courier of Medicine.

June.

64 The Differentiation of Complements. Carl Fisch.
65 *Relief of Bladder Symptoms by Treatment of the Uterus, and Vice Versa. H. S. Crossen.
66 The Value of the Static Machine as a Therapeutic Agent. H. N. Chapman.
67 The Relation of Modern Researches on Immunity to Physiology. John Zahorsky.

65. Bladder Symptoms and the Uterus.—Crossen reports a case of uterine disorder with various symptoms associated with it, including bladder disturbance, and this seemed to be the principal difficulty. It was treated with poor success for a number of years. He operated, opening the posterior cul-de-sac, and loosened up the uterus from adhesions. He then performed the Alexander operation, with the result of completely curing the bladder difficulty and all the other symptoms. In another case there was incontinence of urine, due to destruction of the urethra by a syphilitic ulcer, unrelieved by operation. In studying the case he concluded that the failure was due to dragging of the displaced uterus on the neck of the bladder and the irritation of the catheter in the wound, so he opened the abdomen, broke up the adhesions, attached the fundus uteri to the abdominal wall and then repaired the pelvic floor. When the patient had recovered he then operated a second time directly to relieve the uterine incontinence. The result was perfect, which he attributes largely to the uterine operation. In still a third case there were symptoms attributed to injury of the pelvic floor with downward displacement of the uterus, which were cured by washing the bladder out with boric acid solution.

Illinois Medical Journal, Springfield.

June.

68 *President's Address, Illinois State Medical Society. M. L. Harris.
69 *Food. J. A. Wesener.
70 The Renaissance. J. L. Wiggins.
71 *Some Observations on Iodophilia. Adolph Gehrmann.
72 Pelvic Abscess. J. A. Baughman
73 Operative Dysmenorrhea. G. Kollscher
74 Notes on the Treatment of Puerperal Infections. Thomas J. Watkins.
75 Brometone. E. Fletcher Ingals.

68. See abstract in THE JOURNAL, xl, p. 1304.

69. **Foods.**—Wesener describes the process of digestion and goes at length into the question of adulteration, showing that a large proportion of the articles of food in daily use are more or less sophisticated. The finer qualities of flour are an exception; it is rare to find them adulterated. Among the food substances that are absolutely pure he includes flour, cereals, meat and fresh vegetables. Of all the food preservatives used formalin is the most harmful as acting directly as an irritant on the gastrointestinal tract, making the proteids of milk and other substances in which it is used indigestible. The arrangement of a well-balanced diet is a complex matter and largely varies with individuals. The tendency to overeat is especially condemned.

71. **Iodophilia.**—Gehrmann reviews the subject of the iodin reaction on the part of the white cells, which is most constantly found in connection with suppuration, diabetes and severe anemia. He is inclined to think that iodin-staining substances are of the nature of glycogen rather than amyloid. The test should be more generally employed.

Albany Medical Annals.

June.

76 *The Prevention of Puerperal Eclampsia. John T. Wheeler.
77 *Report of a Case of Tetanus Treated with Antitetanic Serum. Charles B. Mallery.

76. **Puerperal Eclampsia.**—The importance of frequent examinations of the urine in pregnant women is insisted on by Wheeler, who believes that women themselves should be taught to make examinations, and if any warning symptoms occur for the physician to carry them on. He always teaches his patients to make the test if they reside at a distance or are poor or there is anything that prevents close personal attention.

77. **Tetanus.**—Mallery reports a case of tetanus successfully treated with antitetanic serum, and he has looked up the literature on the matter. He finds 277 cases thus treated with a general mortality of 63 per cent., and as compared with the cases treated without antitetanic serum the value of the method is made evident. The small mortality of the St. Louis outbreak from infected diphtheria antitoxin is attributed by Fisch to the preventive use of the serum. He concludes that his own case would have been fatal without this treatment. The condition was desperate when it was begun, and was at least arrested by 40 c.c. of the antitoxin. The effect of the serum treatment was also noticeable in the speed of recovery. Reports show that favorable cases treated in other ways recover slowly and that muscular rigidity, and especially trismus, continues for weeks and months. Had he been able to give the serum in larger quantities at first and dared to use it as he did later, he believes that he could have cured the patient much quicker. He also doubts whether there is any notable difference as to the method of injecting, whether it is put under the skin by subcutaneous injection or into the spinal canal, the vital point being the early use of the remedy in large quantities. In his case he used 400 c.c., or 20,000,000 units, injecting it indiscriminately under the skin of the legs, arms, chest or abdomen.

Archives of Pediatrics, New York.

June.

78 A Review of the Work of the American Pediatric Society. J. P. Crozer Griffith.
79 The Changes in the Management of Laryngeal Diptheria Treated by Intubation. Edwin Rosenthal.
80 *The Paroxysms of Whooping Cough Treated by Pulling the Lower Jaw Downward and Forward (Naegeli). Jacob Sobel.
81 Congenital Asymmetry or Hemihypertrophy in an Infant. A. Hymanson.
82 A Case of Ludwig's Angina from Infection of the Lingual Frenum. Charles J. Aldrich.

80. **Whooping Cough.**—Sobel finds, as a result of his experience with the Naegeli maneuver for overcoming whooping cough, that: "1. Pulling the lower jaw downward and forward controls the paroxysms of whooping cough in most instances, and most of the time. 2. The method is usually more successful in older children than in younger ones and infants. 3. In cases without a whoop the expiratory spasm, with its asphyxia, is generally overcome, and in those with a whoop the latter is prevented. 4. As a single therapeutic measure for the control of the paroxysms it deserves a place in the treatment of pertussis and is as successful as any single drug, or even more so. 5. Mothers, nurses and other attendants should be instructed in its use in order that the oncoming attacks, especially at night, might be arrested. 6. The manipulation is harmless, painless and easy of application, without any of the ill effects of drugs; it offers a maximum good effect with a minimum derangement. 7. The only contraindication to its application is the presence of food in the mouth or esophagus. 8. Patients treated in this manner are less likely to suffer from complications and sequelæ than those treated only medicinally; they emerge from the disease in far better condition, less exhausted and less emaciated because vomiting has been controlled. 9. It is advisable to try the maneuver in other spasmodic coughs and laryngeal spasms (laryngismus stridulus, pressure of enlarged cervical and bronchial glands, influenza, glottis spasm in catarrhal laryngitis), although my experience has seemed to show that it is far less efficacious in these conditions than in whooping cough. 10. This method being directed mainly to the control of the glottis spasm, does not preclude the advisability of supporting and sustaining the patient, guarding his gastrointestinal tract, establishing equilibrium in the nerve centers and affording him every possible hygienic advantage. 11. It is particularly indicated in instances complicated with diffuse bronchitis, bronchopneumonia, convulsions, epistaxis, subconjunctival or subcutaneous hemorrhage, or sublingual ulceration and in those children who by virtue of age, the presence of rachitis, scrofula or general debility are predisposed to serious complications and sequelæ."

Ophthalmic Record, Chicago.

June.

83 Some Ophthalmic Cases I Have Seen. Alex. W. Stirling.
84 *The Ophthalmoscopic Examination of the Macula. Edward Jackson.
85 *Spring Catarrh. Wilson P. Malone.
86 A Note on the Use of Jequiritol and Jequiritol Serum (Merck). Casey A. Wood.
87 The Action on Mucous Membranes of Silver Salts, with Especial Reference to Some of Their New Organic Forms. Arthur G. Hobbs.
88 Ineffectual Attempt to Remove a Piece of Steel from the Eye with the Haab Magnet. William H. Wilder.
89 Incised Wound of the Cornea Made by a Fragment of Spectacle Lens. S. Mitchell.

84. **Ophthalmoscopic Examination of the Macula.**—Jackson describes the methods of studying the ophthalmoscopic appearances of the macula, and shows how it can be done with the ordinary ophthalmoscope with an undilated pupil, if the instrument is used to the best advantage. "The corneal reflex can be so reduced as to allow the surgeon to see the pupil alongside of it, by making the sight-hole small, 1.5 mm. in diameter, and holding it so that one edge of it is in front of the center of the surgeon's pupil, or by using a half mirror. The visible field can be enlarged by getting close to the patient's pupil and excluding all unnecessary light. The illumination of the retina can be rendered brilliant at a certain point, or diffused equally over the whole visible field, by adjusting the source of light at the proper distance from the mirror, and by placing the right lens in a trial frame before the patient's eye."

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> 1. In epicarin we have an important addition to the means of combating ringworm of the scalp. Used, preferably, in the form of a tincture of 10 to 20 per cent. strength and, after epilation, it appears to act more rapidly than any of the remedies heretofore employed in restoring the hairs to a normal condition. 2. In ringworm of the body the tincture seems to be irritating and slow in action. The ointment acts better, but is not equal to the ammoniated mercury ointment, nor to most of the remedies ordinarily employed. 3. In (a single case of) favus the result of the use of epicarin was such as to encourage trial. 4. In scabies, so far as our experience goes, epicarin in the form of the tincture and simple ointment is apt to prove very irritating and is by no means equal to the sulphur and naphthol nor to the other ointments ordinarily employed.

95. **Blood Pressure in Cerebral Compression.**—In summarizing his article Cushing calls attention to the following points:

> Varying degrees of rapid increase in intracranial tension produce disturbances in the intracranial circulation. *To these circulatory*

disturbances the symptoms of compression are solely due. The condition known as acute cerebral compression may be conveniently subdivided into four stages, dependent on the degree of circulatory alteration which has been reached. Each of the stages has its own more or less characteristic symptom-complex. The major or underlying symptoms originate in the centers situated in the medulla, and are only called out when the degree of intracranial tension begins to approach the arterial tension so that anemia is threatened. A circulatory condition in the medulla which borders on anemia has the effect of stimulating the vasomotor center. Thus, a rise in blood pressure is occasioned which restores the local circulation. The extent of this rise may be taken as an indication of the degree of advancement of the compression. Beyond a certain point, however, this reaction can not take place. The vasomotor center under these circumstances fails, and the respiratory efforts cease entirely. In conjunction with other symptoms a progressive increase in arterial pressure or a high degree of the same, which has been already reached, or a pressure which exhibits from moment to moment great alterations in level may be taken as a certain indication of the advisability of early operative intervention. In case there are localizable symptoms the site of trepanation is plainly indicated. In case of generalized compression from widespread hemorrhage when there are no localizing indications, the intracranial tension should be relieved by the elevation of a large osteoplastic flap from one hemisphere or the other, with a corresponding opening in the dura.

97. **Gangrene of the Lung.**—In the case reported by Riesman, Wood and Pfahler, the condition was desperate, and recovery apparently impossible by any means except operation. The fifth rib was resected, the gangrenous portion of the lung found immediately below the pleura and some necrotic lung tissue removed. The cavity was as large as a man's clenched fist, as found by digital examination. The parts were cleansed with gauze sponges, which brought away all loose matter. It was then packed with sterile gauze and the wound was redressed daily. While the discharge was very profuse at first, the patient gradually improved, and only a month later was in a fair condition, the cavity decreasing in size. From that time on recovery was rapid and satisfactory. The authors discuss the condition and its treatment, insisting on the importance of definitely locating the trouble, using skiagraphs if necessary, making ample opening in the pleura and rib resection, securing adhesions to the pleura before entering the lung, and if they do not exist, stitching the two layers together around the proposed opening into the lung, which may be made in forty-eight hours or sooner if the patient's condition demands it. The condition seems to follow lobar pneumonia in most cases. They particularly emphasize the absence of fever in the case; the temperature was normal before operation and only rose to about 102 or 103 after the resection for a day or so. Another point mentioned particularly is the gangrenous smelling sputum and the absence of elastic tissue. The value of the *x*-ray in diagnosis is emphasized, and they remark that the acute form is more favorable in its prognosis than the chronic. The mortality without operation is necessarily very high, 70 or 80 per cent. Under operative treatment a death rate of 34 per cent., according to Garré and Sultan, is about normal. In some cases physical examination and examination with the *x*-ray after operation showed a normal lung where there had previously been a gangrenous cavity. The second radiograph in this case also showed a restored lung. Whether there is a true hyperplasia of the air passages or merely an enlargement of the existing ones, can not be said. The importance of adhesions is also emphasized.

98. **Zomotherapy in Tuberculosis.**—From experiments made on dogs in the treatment of tuberculosis, Brown concludes that raw meat has no perceptible effect on the duration of experimental tuberculosis in dogs if the bacilli are virulent and a sufficient number injected intravenously; that it has no effect on the prolongation of the duration of experimental tuberculosis in dogs, even if the bacilli are attenuated, provided a sufficient quantity is injected; that under the same conditions dogs fed on a mixed diet with no raw meat may live a much longer time. As regards the use of meat in pulmonary tuberculosis, he says that it is highly essential in the dietetic treatment and that the judicious mixture of carbohydrates, fats, etc., is essential to the treatment. Raw meat is better than meat well cooked. Meat juice is of great value in suralimentation. It can be taken when the patient can take no other form of meat. The juice from raw meat seems slightly if at all better than the juice from meats slightly browned. The disadvantages of preparing and preserving raw meat juice more than offset its advantages. Patients who object to juice from raw meat will willingly take that from meat browned. It is of value as it can be administered in the form of jellies, ices, etc.

American Practitioner and News, Louisville, Ky.

March 15.

100 Some Reminiscences in the Lives and Characters of the Old-time Physicians of Louisville. T. B. Greenley.
101 The Pulmonary Circulation, More particularly in Relationship to Variations in Cardiac Activity. T. G. Brodie.

Northwestern Lancet, Minneapolis.

June 1.

102 Some Remote Effects of Eye-strain. George H. Thomas.
103 Retropharyngeal Abscess in Adults. J. A. Watson.
104 Post-operative Nasal Synechiæ. Marion A. Mead.
105 A Case of Partial Placenta Previa, with Premature Total Detachment, Complete Uterine Inertia and Dual Fatality. W. A. Chamberlin.
106 Report of a Case of Arsenical Neuritis. H. G. Parker.

June 15.

107 Intestinal Perforation in Typhoid Fever. Edwin T. Ramsey.
108 Drug Treatment for Tuberculosis. Lester W. Day.
109 Acute Inflammatory Glaucoma; Diagnosis and Treatment; Report of Case. E. F. Reamer.

Medical Fortnightly, St. Louis.

June 10.

110 Report of Case of Pistol-shot Wound in Neck; Laminectomy; Results. J. C. Murphy.
111 *Wounds Inflicted by Modern Agricultural Implements. D. W. Basham.
112 Address of Welcome. Tri-state Medical Society. Robert H. Goodier.

111. This article has appeared elsewhere. See THE JOURNAL, xl, ¶27, p. 1755.

Medical Age, Detroit, Mich.

June 10.

113 A Preliminary Report on the Treatment of Tabes with the X-Ray. John W. Daniel.
114 Hepatic Tumors and Hepatosia, with Its Treatment. Byron Robinson.
115 Some Practical Thoughts on Insanity. Charles W. Hitchcock.

Medical Examiner and Practitioner, New York.

June.

116 A Study on Light. J. Mount Bleyer.
117 Constipation. James P. Tuttle.
118 The Bacteriology of the Puerperal Uterus; Its Relation to the Treatment of the Parturient State. S. Marx.
119 Some Notes on Pollacci's New Method of Detecting Albumen in the Urine. Gordon Lindsay and William J. Gies.

California State Journal of Medicine, San Francisco.

June.

120 Report of Medical Legislation and Education. Henry Gibbons, Jr.
121 Report of Medical Education and the Work of the Board of Medical Examiners. W. S. Thorne.
122 Prostatic Obstructions. (To be continued.) Granville MacGowan.
123 A Few Remarks on Gastric Surgery. Dudley Tait.
124 Bone Transplanting and Report of a Case. A. W. Morton.

Brooklyn Medical Journal.

June.

125 Ventral Suspension and Ventral Fixation for Prolapse of the Bladder with the Uterus. Robert L. Dickinson.
126 The Medical Witness. Arthur C. Brush.
127 Economics of the Practice of Medicine. Heber N. Hoople.
128 The Business Aspect of Medicine. Edward Hodges.
129 Early History of Medicine in Kings County. William Schroeder.
130 Glaucoma. James C. Hancock.

Iowa Medical Journal, Des Moines.

June.

131 Vital Statistics; Their Value to the Physician and Some Suggested Reforms in Registration. F. I. Herriott.
132 Public Health Service. W. J. Findley.
133 Gonorrhea in the Female. W. Bowen.
134 The Etiology of Convergent Squint. Eugene R. Lewis.
135 Atresia of the Vagina, Pregnancy and Cesarean Section. L. W. Littig.

Occidental Medical Times, San Francisco.

June.

136 The Repair of Ventral Hernias and a Word as to Their Prevention. J. Henry Barbat.
137 Biomechanical Laws in Medicine. (Concluded.) Moritz Benedikt.

New Yorker Medicinische Monatschrift.

April.

138 Ein weiterer Beitrag zur Anwendung der electrischen Lichtstrahlen bei Tuberculose. W. Freudenthal.

Canadian Practitioner and Review, Toronto.

June.

139 Extirpation of the Prostate, Freyer's Method. F. P. McNulty.
140 Hodgkin's Disease. William Allen.

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93. **Exophthalmic Goiter.**—Hyde and McEwen report several cases of cutaneous disorders in connection with Graves' disease; one of hidrocystoma, one of telangiectases, one of cutaneous pruritus, one of pruritus and angioneurotic edema. These are discussed at length and especial attention called to the case of hidrocystoma, which shows that it may develop in women nowise exposed to the ordinary causes, such as moist atmosphere, etc. The authors review the literature of the cutaneous syndromes of Graves' disease and suggest that in some non-typical cases a point of interest might arise in view of the existence of the skin lesions.

94. **Epicarin.**—This substance is said to be a condensation product of creotinic or creosotinic acid and B. naphthol, and to combine the properties of creosote and naphthol. It was first brought into notice some years ago by Kaposi. It is a reddish amorphous powder with a slight odor resembling acetic acid, is soluble in alcohol, ether and liquid vaselin. Van Harlingen and Dillard have treated a number of cases of tinea circinata and tinea tonsurans with this drug, using principally a tincture of a 10 to 20 per cent. solution and offer the following conclusions:

> 1. In epicarin we have an important addition to the means of combating ringworm of the scalp. Used, preferably, in the form of a tincture of 10 to 20 per cent. strength and, after epilation, it appears to act more rapidly than any of the remedies heretofore employed in restoring the hairs to a normal condition. 2. In ringworm of the body the tincture seems to be irritating and slow in action. The ointment acts better, but is not equal to the ammoniated mercury ointment, nor to most of the remedies ordinarily employed. 3. In (a single case of) favus the result of the use of epicarin was such as to encourage trial. 4. In scabies, so far as our experience goes, epicarin in the form of the tincture and simple ointment is apt to prove very irritating and is by no means equal to the sulphur and naphthol nor to the other ointments ordinarily employed.

95. **Blood Pressure in Cerebral Compression.**—In summarizing his article Cushing calls attention to the following points:

> Varying degrees of rapid increase in intracranial tension produce disturbances in the intracranial circulation. To these circulatory

that we should try to bring down the upper end of the anus more frequently than has been done. He does not favor the radical end-to-end union, but would invaginate the proximal end down into the interior of the distal end, at least one-half to one inch and strip off the mucous membrane of the upper part of the distal end to a corresponding extent. Where this is not possible, he thinks the sacral opening is the preferable procedure, but he does not stitch the open end of the bowel to the skin wound, but rather stitches the skin to the muscular coat of the bowel as far above the divided end as possible. and leaves the ligature on. If he can manage it, he stitches up the wound and completes the operation before cutting off the lower end of the rectum with the tumor. There is some objection to leaving the ligature on for awhile on account of the prevention of the escape of gas, but he has not found it necessary to do anything to relieve the patient before the ligature separates. He thinks in case of sacral anus benefit is derived from Gersuny's suggestion of giving the bowel a half or three-quarters turn before bringing it out. He follows this plan and finds it has great advantage in tending to continence of feces in the artificial opening.

5. **Carcinoma of the Stomach.**—Pollard finds that in some cases where the clinical symptoms point to obstruction of the pylorus from gastric carcinoma, operation is done with the idea of relieving the condition by gastroenterostomy and the growth is found away from the pylorus which is not obstructed. In these cases he believes gastroenterostomy is often still advisable, and reports a case where good results followed. His conclusion is that the clinical signs offer the most important indications for treatment. Where there seems to be obstruction, operation for its relief. even if the anatomic conditions do not indicate it, may be advisable.

The Lancet, London.

June 13.

7 *A Few Jottings in Physiologic Medicine. George Oliver.
8 *Parasyphilis. George Ogilvie.
9 *A Statistical Inquiry into the Prognosis and Curability of Epilepsy; Based on the Results of Treatment. William A. Turner.
10 Malaria as Seen in the Andamans Penal Settlement. Ernest E. Waters.
11 Chronic Suppuration in the Middle Ear; Thrombosis of the Lateral Sinus; General Septic Infection; Operation; Venous Transfusion; Recovery. W. M. Willis.
12 The Aniline Dyes as Therapeutic Agents Andrew Balfour.
13 A Case of Congenital Deformity of the Skull Associated with Ocular Defects. H. Work Dodd and W. Halliburton McMullen.
14 Chronic Volvulus of the Sigmoid Flexure; Intestinal Obstruction; Operation; Recovery. Herbert W. Allingham and E. Chittenden Bridges.

7. **Blood Pressure.**—Oliver notices the fact of the rhythmic rise of blood pressure after eating, which is a little peculiar when we consider that the splanchnic arterioles dilate and should lower it. The arteriometer, however, shows that the arterial caliber is slightly lessened when the splanchnic diversión takes place, and there is a compensatory reduction of the systemic area of the circulation. He finds a certain amount of venous and capillary contraction which suggests that this increased blood pressure wave is associated with an exudation into the tissues of nourishing fluid during digestion. He also notices the effects of temperature on the blood pressure, and also of exercise, and finds that of all the three leading causes of arterial pressure variations, the influence of digestion is paramount and constant. The long curves of rise and fall produced by meals recur with regularity and persist beyond the temporary variations of blood pressure produced by muscular action and by temperature, which only modify the line of these curves in a mere transitory way. The article concludes with some observations on the influence of altitude on the blood pressure, which shows that it falls up to a certain altitude, say 2,000 or 3,500 feet, and above that is rapidly increased. He thinks these facts have a bearing on practical climatology. He is not aware of a climatic condition that will lower the mean arterial pressure to the same extent as the medium altitudes, and this might be considered in sending patients with plus arterial pressure to mountains in the winter months.

8. **Parasyphilis.**—The address by Ogilvie is an interesting one, criticising the theory of parasyphilitic disorders. He says all that is practically new in the modern teaching of parasyphilis, apart from the name, is the enormous extension given to the deleterious and deteriorating influence of syphilis on the race. The idea is not a new one. There is about one inch of discovery to a whole Pacific ocean of invention.

9. **The Curability of Epilepsy.**—Turner discusses the curability of epilepsy, giving an interesting tabulation of statistics and offers the following summary in conclusion:

"1. A total of 366 cases, chiefly derived from the out-patient records of the National Hospital for the Paralyzed and Epileptic, has been used for the investigation. 2. Only cases of genuine idiopathic epilepsy which had been under constant observation and treatment for a period of at least two years have been taken. All cases of symptomatic epilepsy, or cases otherwise complicated, were, as far as possible, eliminated. 3. The cases have been divided into three series, according as they have responded, successfully or otherwise, to treatment: arrested, improved and confirmed cases. The influence of the various conditions modifying prognosis has been mentioned in detail, the results of the observations being stated in the percentages. 4. A family history of epilepsy will be found more frequently among those who have become confirmed epileptics, but a hereditary history of epilepsy does not necessarily militate against the prospects of arrest or improvement of the disease in any given case. 5. The age at the onset of the disease has an especial bearing on the prognosis. The most unsatisfactory cases are those in which the disease commences under 10 years of age; they show the smallest percentage of recoveries and the largest of confirmed cases. If the disease arises between 15 and 20 years of age, an almost equal percentage of arrested and confirmed cases may be expected. The greatest percentage of confirmed cases is found among those in whom the disease begins between 25 and 35 years of age, from which time onwards there is a steady increase in the expectations of arrest and diminution in the number which become confirmed. 6. The duration of the malady influences the prognosis to the extent that arrest or improvement is much more likely during the first 5 than during the second 5 years. Cases, however, may be arrested even after a duration of from 20 to 30 years. 7. The greatest percentage of confirmed and the lowest percentage of arrested cases occur in those epileptics who are subject to daily or weekly attacks, while conversely, the smallest percentages of confirmed and the highest of arrested cases occur in those whose fits are as infrequent as once or twice a year. 8. The character of the seizures influences the prognosis to the extent that the major attacks are the most tractable; then follow combined major and minor seizures; and lastly, the minor attacks occurring alone. 9. Marriage exerts little if any influence on epileptic fits. Some patients are relieved and others are made worse. In the majority of cases the disease remains unaffected. 10. Pregnancy has little influence on the seizures; at the best there may be only a temporary respite. On the other hand, the puerperium would seem to be especially favorable for the recurrence of fits; while lactation also is not without an exciting influence in their production. 11. The common incidence of epileptic fits is an irregular periodicity. There are types, however, which have been described as "increasing" and "decreasing," according as the fits increase or decrease in number in a definite period of time, or in which there is a shortening or lengthening of the intervals between the fits. A case of increasing type may by treatment be converted into one of the decreasing variety. 12. Long remissions, induced either by successful treatment or from spontaneous cessation of the fits, sometimes lasting for several years, are not unusual in epilepsy; they are of favorable prognostic value, but are not synonymous with a cure of the disease. 13. From the collected statistics a period of remission for at least nine years has been fixed as the basis on which a cure of epilepsy may be established. With this definition of a cure I regard 10.2 per cent. of epileptics as curable. 14. There are some cases of epilepsy which may be regarded as belonging to a curable type of the disease. These present little or no mental impairment, notwithstanding that fits may have existed for a long period. In the cases in which arrest took place, cessa-

75. **Fat Transformation, Degeneration, Etc.**—Arnold classifies lipogenesis as exogenous and endogenous. The exogenous includes the physiologic migration of fat particles, fat embolism, fatty infiltration, and pathologic metamorphosis of fat, simple and necrobiotic, that is, the intracellular formation of fat according to the principles of synthesis and of phagocytosis. The endogenous (albuminogenous) includes the intercellular formation of fat from breaking down of albumin, and fatty degeneration.

82. **Intestinal Affections in Malaria.**—Glogner occupies an official medical position in the Dutch East Indies, and seven years' experience has convinced him that the dysentery, diarrhea and other symptoms of the so-called tropical dysentery are in many instances due to the action of the malaria parasite and vanish on exhibition of quinin. This is especially likely to be the case when diarrhea occurs intermittently, the periodicity suggesting that of malaria, without fever. In other cases there may be muco-bloody stools, violent pains, spontaneous and on pressure, with tenesmus and emaciation, and yet quinin soon banishes the syndrome. Negative examination of the blood does not exclude malaria unless in presence of fever. In these atypical, intestinal forms the malarial plasmodia are rarely discovered in the blood and yet the regular intermittency of the manifestations and the prompt response to quinin certainly indicate a malarial affection.

84. **Retrogression of Tophi.**—Rindfleisch examined under the microscope a tophus removed from his own olecranon process. He found that the deposit of uric acid was surrounded by a row of polynuclear giant cells, evidently phagocytes, which under favorable conditions devour the particles of the uric acid, and thus reduce the size of the deposit. He believes that this phagocytic action is scarcely possible, except in very vascular regions.

91. **Relations of Chloroma to Leukemia.**—A young glassblower was admitted to the hospital with symptoms of transverse myelitis which proved fatal in a few weeks. The patient also presented the symptoms of acute lymphatic leukemia. The myelitis was caused by compression of the spinal cord by a large chloroma and similar tumors were found elsewhere in the periosteum and in close vicinity of the long bones, etc. Usually, the head and spine are exclusively affected, but sometimes the green lymphomata are located in the kidneys, lungs, mamma, testicles, broad ligaments, and as in the case described, in the urethra. The entire lymph apparatus and bone marrow exhibit hyperplasia, while the blood and mucosæ present the picture of acute lymphatic leukemia from which chloromatosis is only distinguished by the presence of the green tumors.

92. **Pathology of Diabetes.**—The case published by our American confrères was distinguished by the integrity of the pancreas while the gastrointestinal mucosa was in a condition of extreme atrophy with diffuse small-celled infiltration similar to what is observed in some cases of pernicious anemia.

Centralblatt f. Bakteriologie, Jena.

Last indexed page 879.

93 (XXXIII, 3.) Untersuchungen über Sarcinen, Streptococcus und Spirillen. D. Ellis (Marburg). (Commenced in No. 1.)
94 *Zur Epidemiologie des Typhus abdominalis. Tavel (Berne).
95 *Immunization of Animals Against Tsetse Fly Disease. Schilling.—Dritter Bericht über die Surrakrankheit der Rinder und Pferde im Schutzgebiete Togo.
96 Abortion Bacillus. Preisz (Budapest).—Der Bacillus des seuchenhaften Verwerfens. *Found in one cow.*
97 Experimentelle Untersuchungen über Bakterien-Antagonismus. L. A. Lode (Innsbruck).
98 A Study of a Hemolytic Complement Found in the Serum of the Rabbit. J. Edwin Sweet (Philadelphia).
99 Ueber das polyvalente Streptokokkenserum bereitet durch menschliche Streptokokkenstämme ohne Tierpassage. Tavel (Berne). Claim for priority.
100 Swine Plague Serum. L. Deutsch (Budapest).—Beiträge zur Kenntniss des Schweinrothlaufserums.
101 Confirmation of Experimental Efficacy of Fowl Cholera Serum. F. H. Mosler.—Wertbestimmung von Geflügelcholeraserum.
102 Beitrag zur Bekämpfung der Anopheles. D. Rivas (Nicaragua).
103 Staining of Actinomyces in Sections. S. Ciechanowski (Cracow).—Zur Technik der Aktinomycesfärbung in Schnitten.
104 *Zur Gonokokkenfärbung (staining). A. v. Wahl (St. Petersburg).

94. **Epidemiology of Typhoid.**—In the recurrence of an epidemic of typhoid fever at Berne the proof was afforded that under certain conditions, as in standing water, typhoid bacilli may remain alive and retain their propagating and virulent qualities unchanged for several months.

95. **Principles of Immunization Against the Tsetse Fly Disease.**—Schilling thinks that the principles of successful immunization against the surra or tsetse fly disease are now thoroughly established. The property possessed by the parasite of adapting itself to its temporary host, may be utilized to attenuate its virulence for a certain species.

104. **Rapid and Effective Stain for the Gonococcus.**—Wahl thinks that he has solved the problem of producing a stain which keeps perfectly, stains the gonococci dark and the elements of the secretions another and lighter color, while the results are complete in five to fifteen seconds. He mixes 2 c.c. of a concentrated alcoholic solution of auramin with 1.5 c.c of 95 per cent. alcohol; 2 c.c. of a concentrated alcoholic solution of thionin; 3 c.c. of a concentrated aqueous solution of methyl green, and 6 c.c. of water. It is ready for use at once, and has kept unchanged for a year.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

105 (No. 21.) *Ueber Hemisystolie. E. v. Leyden.
106 *Tuberkulose des lymphatischen Apparates. E. Hitschmann and O. Stross (Vienna).
107 Verhalten der grossen mononuklearen Leucocyten und der Uebergangsformen (Ehrlich) bei Carcinoma ventriculi. Korpjuweit (Königsberg).
108 *Die Prognose der Herz-Arrhythmie. E. Rehfisch (Berlin). (Commenced in No. 20.)
109 Ear Speculum with Adjustable Lens. Bergemann (Husum).—Ohrspekulum mit stellbarer Lupe.
110 Oil Treatment of Cholelithiasis. Flaser.—Oelbehandlung der Chol. *One case. Cure.*

105. **Hemisystolia.**—As long ago as 1868 von Leyden described a case of what he called hemisystolia, non-synchronous contraction of the two ventricles. His assertions were disputed and he confesses that he has never seen but two cases since, and these not so marked as his first, which was reported in detail in *Virchow's Archiv* for that year, xliv, p. 365. The left ventricle contracted first without any perceptible participation of the right, and then the right without the participation of the left. It is a very rare phenomenon, and he is convinced that it never occurs except after large doses of digitalis. Openchowski has demonstrated on animals that the left heart beats nearly one-half slower than the right after injection of helleborin or digitalis, and is inclined to regard the right ventricle as immune to the action of these drugs. In a number of cases of mitral stenosis with dilatation of the right ventricle, von Leyden has noticed that digitalis had very little effect, and assumes that the thicker musculature is the reason why it acts more on the left ventricle than on the right. Broadbent, in his recent work, refers to the "supplementary systole of the right ventricle induced by digitalis." The phenomenon of hemisystolia is, therefore, being given more credence as time passes by physiologists and clinicians.

106. **Tuberculosis of Lymph Apparatus.**—The case reported was similar to that described by Sternberg in the *Ztft. f. Heilkunde*, 1898, xix, as a peculiar tuberculous affection of the lymphatic apparatus with the clinical picture of pseudoleukemia. The patient was a man, a hair dresser, 28 years old, who had suffered from dysentery during military service in the tropics, also from malaria and recurring phlegmonous throat affections. The first symptoms were pains in the left arm and enlargement of the glands in neck and axilla, followed by night sweats and fever. The glandular affection and pains spread to involve other regions, the spleen and liver became hypertrophied with marked emaciation and general edema. The intensity of the pains required the continuous use of morphin, and the patient died in cachexia about fifteen months from the first symptoms. Pus was sometimes found in the sputa, but no tubercle bacilli. The blood count showed 10,000 leucocytes at first, but a polynuclear leucocytosis to 42,000 suddenly developed. Tubercle bacilli were found in the lymph glands and spleen and typical tubercles in the latter and in the liver. No evidence of what Sternberg styled "transitional processes of merely inflamed parts into tuberculous tissue" was discovered.

108. **Prognosis of Cardiac Arrhythmia.**—Rehfisch refers to the fact that the functional activity of the heart is the product of its three inherent factors: its automatic excitability, the reaction to this excitability, that is, its power of conducting the stimulus, and lastly, its power of contraction. When any one of these factors is altered, arrhythmia in some form follows, and the prognosis depends on which of the factors is involved. In cases of abnormal excitability, shown in the extrasystole, which is the evidence of a disproportion between the power of the heart and the task required of it at the moment, the prognosis depends on the fundamental affection causing the extra excitability. This is usually arteriosclerosis, organic heart disease or pure nervousness. Knoll, by augmenting the resistance in the arteries, was able to elicit the extrasystole in his experimental research, similarly to what is observed in arteriosclerosis, either diffuse or of the coronary alone. The extra resistance imposes extra work on the heart, and this is followed by extra excitability. Nervous subjects come under this same law, as emotions are accompanied by variations in the blood pressure, which make extra demands on the heart and entail extra excitability and the extra systole. If arteriosclerosis and excessive nervousness can be excluded, then the extra systole is an evidence of organic heart affection, and hence its prognosis is grave, otherwise not. Of great importance in this case is the duration of the compensatory interval of rest, as he describes in detail with various pulse curves. The second factor in the cardiac function, the conductibility of the impulse, may be impaired by defective conductibility in the so-called block fibers, the muscular fibers connecting the atrium and the ventricle, which retain their embryonal type more than the others, and do not pass the impulse on so rapidly as the latter. They also are the ones to suffer first from any injury and if much degenerated, are able to arrest the impulse entirely, thus producing the "block heart." The distinguishing sign of disturbance in the conductibility is that the duration of one interval is always less than that of two pulse periods, and that the period following the interval is always longer than the second one. The irregular pulse of nervous and neurasthenic subjects is characterized by the grouping of the pulse beats. From 72 the pulse may jump to 96, but it never changes to a multiple of itself, a pulse of 48 does not follow one of 96, as in case of severe organic heart disease. In the missing pulse of nervous subjects the duration of the interval is much less than that of two pulse periods and seldom surpasses 60 per cent. of a pulse period. In case of acute infectious diseases the heart rallies all its energies and works with its utmost strength so that pulsus deficiens is not observed during the climax of the disease, but after the acute stage is past, then the heart relaxes its efforts, and we can then determine to what extent it has been impaired by the stress it has undergone, and the action of toxins, and what its loss in effective muscle substance and cell energy. If normal conditions are restored, the pulse will become normal also, but as long as the pulsus deficiens lasts it should be carefully supervised by the physician and the prognosis is not good. The prognosis of arrhythmia due to enfeebled contracting power is grave. Rehfisch states that he knows of only one case of pure pulsus alternans. This was published by Riegel, and he reproduces the curve.

Klinisch-Therapeutische Wochenschrift, Vienna.

Last indexed page 1471.

111 (X, 13-14.) *Autoserotherapy in Pleuritis. N. F. Tschigaeff (St. Petersburg).—Die Behandlung der serös-fibrinösen Pleuritis mittels subkutaner Injektionen pleuritischer Flüssigkeit. (Commenced in No. 12.)
112 Value of Protargol in Gonorrhea. Hirschl (Prague).—Ueber die Behandlung der gon. Vulvavaginitis.
113 Megalophthalmus und Hydrophthalmus in einer Familie. M. Bondi.
114 Blood-Pressure Reducing Action of Peat Baths. A. Loebel (Dorna).—Die Blutdruckreduzierenden Werte der Moorbäder.
115 (Nos. 15-16.) Die diagnostische Bedeutung der Pupillen-Reaktion. O. Marburg (Vienna).
116 Pulverized Metals for Surgery. A. Strauss.—Das Epithol-Gold und Epithol-Silber in der Chirurgie und Dermatologie.
117 Hydrotherapy in After-Treatment of Respiratory Affections in Children. S. Behrmann.—Ueber die Verwendung des kühlen, warmen und heissen Wassers zur Nachbehandlung der Erkrankungen der Respirationsorgane im Kindesalter. Zur Prophylaxie der Tuberkulose und der Meningitis tuberculosa.
119 (Nos. 17-18.) Dislocation of Abdominal Organs from Lacing. N. Zuckor (Franzensbad).—Dislokation der Bauchorgane der Frau als schädliche Folge des Schnürens.
120 (Nos. 19-20.) *The Struggle and the Immunization of the Organism Against Tuberculosis. E. Maragliano (Genoa).—Der Kampf und die Immunisierung des Org. gegen Tub.
121 Ueber die operative Behandlung des Uterus-Carcinoms. J. Hausman (Pawlik's clinic, Prague). (Commenced in No. 17.)
122 Infectious Diseases in Austria and Prussia by Age and Sex. S. Rosenfeld.—Die Infektionskrankheiten in Oesterreich und Preussen nach Alter und Geschlecht. (Commenced in No. 18.)
123 (No. 21.) Ueber epileptische Traumzustände. Epilepsia rotatoria und die Beziehungen zwischen Rinden- und genuiner Epilepsie. A. Pick (Prague).
124 Die Serumtherapie des Abdominal-Typhus bei Kindern. A. Josias. Address at Madrid Congress.
125 (No. 22.) Suicide in Syphilis. A. Fournier.—Ueber Selbstmord bei Syph.
126 Hydrotherapy. W. Rosenfeld.—Zur Heisswasserbehandlung in der Gynäkologie.

111. **Autoserotherapy in Pleurisy.**—Gilbert's method of treating pleuritis by injecting some of the fluid derived by aspiration from the pleura was tried by Tschigaeff in 9 cases. In all the effusion ceased to increase after the injection and immediate absorption commenced. Acute serofibrinous pleuritis treated in this way was cured in about two weeks on an average. The earlier the injection was made, the prompter the recovery. No reaction to the injections occurred in cases of rheumatic origin, while in those due to tuberculosis there was always a brief febrile reaction. He describes a few typical cases in detail. One recovered after one injection, another required two, and a third four. The patients were from 18 to 66 years of age in these published cases. He aspirated about 5 c.c. of the serofibrinous effusion and reinjected subcutaneously 1 or 2 c.c. of it in the scapular region. No other treatment seems to have been instituted and the effusion was rapidly absorbed.

120. **Immunization Against Tuberculosis.**—Maragliano, in this address, delivered at the Madrid Congress, confirmed Behring's assertions in regard to the possibility of inducing passive immunization by means of the milk of immunized cows. He states that he has been experimenting in this line for five years, and has been able to isolate the protecting substance in the milk of the cows, although in small amounts, and has also established that antitoxin taken into the digestive tract is absorbed and displays its protective action on animals and man as when injected. Passive immunization can thus be realized by injection or ingestion of antitoxin. The antitoxic substances are found not only in the milk and blood but also in the meat of immunized animals. He proclaims that when a tuberculous focus anywhere on the body has completely healed, the individual is usually thereafter immune to tuberculosis. In families in which tuberculosis prevails, those members usually escape who have had a tuberculous joint or cutaneous affection or tuberculous focus elsewhere, from which they have completely recovered. When an individual has completely recovered from a local tuberculous affection, as a rule, he is therefore immune. Maragliano denounces the injection of living bacilli, no matter how attenuated, as dangerous, and contends that Behring is wrong when he asserts that active immunization is not possible save with living cultures. He has succeeded in inducing active immunity by injection of the tuberculous toxin alone, and has effectually induced the production of antitoxin and agglutination by this means. As early as 1891 he proclaimed that the action of Koch's old tuberculin was probably due to the elaboration of protecting substances in the body which it induced, and all his experimental and clinical research since has only confirmed this view. He has tried the tuberculin test again and again on some of his patients whom he has cured of tuberculosis with serum from immunized animals, and the results have always shown that the cure was complete during seven years' experience. None of his patients have changed their environment, one is a physician who continues his practice, constantly exposed to new infection. Maragliano is now engaged in the attempt to produce a tuberculous focus which will confer active immunity after healing, without the use of living cultures. He has been eminently successful on animals and has repeatedly induced an inflammatory tuberculous focus at the periphery with a mate-

rial which he does not describe more fully. *Applying the results to man*, he has been able to induce the production of *agglutination* and pronounced leucocytosis, the same as observed in animals, although in the clinic the crucial test of inoculation with tuberculosis is out of the question. He makes the artificial focus on the arm and a small inflammatory lesion develops, with sterile pus, and three days of fever, which then subsides and heals.

Muenchener Med. Wochenschrift, Munich.

127 (No. 17.) Determination of Total Indol Elimination. A. Schmidt (Dresden).—Ueber den Nachweis und die Bestimmung des Indols in den Fäzes mittels der Erlich'schen Dimethylamidobenzaldehyd-Reaction.
128 Ibid. R. Baumstark.—Bestimmungen der Fäulnisprodukte im Urin und in den Fäzes mit Benutzung der Ehrlich'schen Aldehyd-Reaktion.
129 *Leukocytose bei Perityphlitis. H. Goetjes (Berlin).
130 Points in Which I Differ from Riedel in Regard to Gallstone Surgery. H. Kehr.—In welchen Punkten ich von Riedels Ansichten über Gallensteinchirurgie abweiche.
131 Recovery After Subcutaneous Contusion of Kidney. G. Schmidt.—2 Falle von subk. Nierenquetschung mit günstigem Ausgang.
132 *Principles for Treatment of Abdominal Contusions. F. Fraen[illegible] Einige Grundsatze fur die Beurteilung [illegible] Kontusionen des Bauches.
133 Bullet [illegible] Wieting (Constantinople).—Zur Frage der Geschossextraktion aus dem Gehirn bei penetrierenden Schädelschüssen.
134 *Ueber gummöse Syphilis der Mamma. J. Heller.
135 Lamp for Transillumination of the Eye. M. Sachs (Vienna).—Neue Durchleuchtungslampe und ihre Verwendung in der Augenheilkunde.
136 Improved Dropper for Sterilizing Eye Fluids. Mohr (Düsseldorf).—Verbessertes Tropfglas zur Sterilisierung von [illegible]
137 Zu [illegible] Doktor-Jubiläum. Henop.
138 (N[illegible] of Fibrinous Pneumonia. W. Ebstein (Göttingen).—Frührezidive bei der fibrinösen Lungenentzündung.
139 Immune Bodies. K. Landsteiner.—Ueber die Verbindungen und die Entstehung von Immunkörpern.
140 Arrested Development of Kidneys. E. Meyer.—Ueber einige [illegible] der Niere.
141 [illegible] Carcinoms. P. Wolf (Dresden).
142 [illegible] deward Glance Paralysis. Seggel. [illegible] uzens- und seitliche Blicklähmung.
143 [illegible] Paralysis. T. Schilling.—Zur Frage [illegible] Okulomotoriuslähmung.
144 *Prevention of Closing of Nostrils During Inspiration. K. M. Menzel.—Zur Behandlung der Nasenflügelansaugung.
145 Anthrasol, ein gereinigter, farbloser Teer (cleansed, colorless tar) und seine therapeutische Anwendung. A. Sack (Heidelberg).
146 *Hyperemia as a Therapeutic Measure. A. Bier.—Hyperemie als Heilmittel.
147 Improved Technic of Intubation. F. Cuno (Frankfurt a. M.).—Fixierte Tuben und Bolzenkanülen bei erschwertem Dekanülement.
148 (No. 19.) *Diagnostic Experience with Tuberculin. Freymuth (Breslau).—Diag. Erfahrungen mit Tub. an Lungenkranken.
149 Explanation of Favorable Influence of Bed Rest on Fever in Phthisis. Pickert (Beelitz).—Zur Erklärung, etc. Ascribes it to hyperemia induced in lungs.
150 Study of Results of Sanatorium Treatment of Pulmonary Affections. W. Ambrosius (Hanau).—Erfolge der Heilstättenbehandlung bei lungenkranken Mitgliedern zweier Krankenkassen.
151 Ibid. F. Wolff (Reiboldsgrün).—Zur Heilstättenbehandlungen, etc.
152 Ibid. G. Liebe (Waldhof Elgershausen).—Die Bedeutung der Heilstätten.
153 Exaggerations in Medicine. M. Karger.—Uebertreibungen in der Medicin.
154 Digestion Vacuoles. Spirlas (Athens).—Ueber Verdauungsvakuolen und ihre Beziehungen zu den Foa-Plimmerschen Krebs-Parasiten.

129. **Leucocytosis in Appendicitis.**—In examination of 40 patients with inflammation of the cecum Goetjes found that leucocytosis of 20,000 to 30,000 in appendicitis was the invariable index of a circumscribed suppurative process unless due to some complication. In case of diffuse peritonitis the blood count has no regular differentiating value except that high leucocytosis indicates a better prognosis.

132. **Abdominal Contusions.**—In distinguishing between a mere contusion and one accompanied by injury of some internal organ, Fraenkel emphasizes that the amount of shock is not always in proportion to the severity of the injury but that shock prolonged for more than six hours speaks for injury of some viscus. As the temperature is lowered in shock it is no criterion of the harm done at first, but a slight rise is an important indication of the escape of fecal masses or of accumulation of blood, bile or urine in the abdominal cavity, the temperature continuing to rise gradually. If the temperature taken hourly in the rectum is above normal and constantly rising, a severe internal injury can be assumed. The pulse is affected by the shock, but if it continues bad for hours and grows worse, an internal injury may be accepted. If vomiting occurs immediately it has no differentiating value, but if it first appears a few hours after the injury it indicates internal damage. But this tardy vomiting does not always accompany internal injury and to wait for it is to allow time for peritonitis to develop. Vomiting of blood indicates almost always gastric hemorrhage. The aspect of the abdominal walls is not conclusive, except the contraction. The abdomen may be drawn in like a crater. Meteorism is a symptom of commencing peritonitis. The abdomen contracts to rest the intestines, and this phenomenon is seldom absent in case of internal laceration of an internal organ. Pain is another important symptom, spontaneous or on pressure, localized or general throughout the abdomen. When it constantly increases in intensity it speaks for internal injury, but is not its inevitable accompaniment. The pain radiates to the shoulder in case of injury to liver and spleen. Percussion of the abdomen may reveal an exudate at once, but a small one in the lower pelvis is best discovered by palpation through the rectum, which should never be neglected. The disappearance of the liver dulness is also a valuable sign, as it indicates the escape of gases from the intestines or displacement of the liver by increasing meteorism. None of these signs are pathognomonic, and the examination should be repeated from hour to hour by the same person. The patient should be taken to a hospital or clinic on suspicion of severe abdominal injury, and everything prepared for an operation once the diagnosis is assured, although it may not be needed. In the meantime absolute repose and total abstinence. Opiates should not be given during this period of observation, nor stimulants nor saline infusion. They all mask the true diagnosis. Camphor may sometimes be required in severe shock. The exploratory laparotomy should be a short incision in the median line under infiltration anesthesia. It can be enlarged as necessary under "ether drop" narcosis, which Fraenkel prefers in these cases, with an incision from the ensiform process to the symphysis, sometimes supplemented with transverse incisions, to enable all the injured points to be discovered and rapidly treated. Time saved is so much vital energy saved. Unless it is possible to flush the cavity with 20 to 30 liters of saline infusion or sterile water he prefers to refrain and sponge it dry. Recovery depends mainly on the after-treatment in many cases. Saline infusion here asserts its rights. Petry has reported 55 per cent. recoveries in those operated on within twelve hours, and 33 per cent. of those operated on in a few days, his statistics comprising 42 cases. Fraenkel has seen 17 recover out of 31 operated on within three days. In 30 cases of laceration of the spleen, 16 recovered after operation. The total statistics show that 50 per cent. were cured, and a large number were very severe, otherwise doomed cases.

134. **Syphilitic Gummata of the Mamma.**—Heller started to remove a large supposed cancer of the mamma in a woman in the tertiary stage of syphilis, but after opening into the tumor found that it was a gumma, and refrained. He has collected nearly 50 similar cases of gumma in the mamma in the literature, but can not find one in which the tumor was retromammary as in his case. All were cured in a few weeks by exhibition of potassium iodid.

138. **Early Recurrence of Fibrinous Pneumonia.**—Ebstein refers to the relative frequency with which pneumonia recurs later in the same individual, as compared to typhoid. The cases of early recurrence of pneumonia are much rarer, but in his forty-three years' experience he has encountered one which he describes in detail. A young man convalescing from fibrinous pneumonia affecting the lower right lobe had seven days free from fever, after which the temperature rose again to its former height and there was evidently a new infection, a new pneumonia, affecting the same lobe and terminating in convalescence as before after four or five days. He reviews the literature in regard to what he calls "tardy recurrence," and states that 81 patients out of 438 cases of fibrinous pneumonia at Göttingen had pneumonia recur later from two to eleven times. Rush still heads the list, however, with his patient who had pneumonia twenty-eight times. Wagner ob-

served 2 cases of "early recurrence" in 110 cases, and 2 occurred at the Berlin Charité in 440 cases of pneumonia. Grisolle stated that one-twenty-eighth of all his cases had these early recurrences, which he called relapses. One patient had three, and Binz has reported a case with two. A few other cases have been published, including 2 reported by Osler. In Ebstein's experience with typhoid fever he has observed 13 cases of recurrence in 300 cases of ordinary typhoid, and 1 in 600 of the exanthematous form. He cites in conclusion as a curiosity Diemerbroeck's observation of a family of 4 children from 8 to 14 who all had an early recurrence of smallpox directly after convalescing from the primary attack.

143. **Recurring Oculomotor Paralysis.**—Schilling relates a case in which this paralysis appeared first at the eighth year and then recurred now and then during the seven and a half years to date, the intermissions growing shorter as time passed and the attacks less severe. Each was accompanied by pains in the forehead and temple on the same side as the paralysis, vomiting and great depression. There were no symptoms of migraine during the intervals and no history of migraine in the family. There was paresis during the intervals of the paralysis between the attacks. He suggests as an explanation a congenital weakness of the nerve involved, which is overcome by the accumulation of metabolic toxins. This assumption is sustained by the fact that the patient stutters, and also by the discovery of a field of medullated fibers in the fundus of the eye on the side affected.

144. **Treatment of Sucking in of Nostrils During Inspiration.**—Menzel has found paraffin prothesis a complete relief for this condition.

146. **Hyperemia as a Therapeutic Measure.**—This article is merely a detailed review of the large book on the subject recently published by A. Bier of Greifswald, dedicated to Esmarch. It is the work of a skilful surgeon, who brought the light of his experience to bear on physiologic and pathologic processes and was able to discover some entirely new standpoints for therapeutics and to supply the scientific basis for a number of empirically established facts. He regards superheated air as the best measure for inducing active hyperemia, and a moderately tight rubber band as the best for the passive. If the band is too tight the cold congestion that ensues is a very dangerous condition. There should be no pain in this form of therapeutic hyperemia. In tuberculosis he advocates interrupted passive hyperemia with long pauses. He has found the Junod boot effective, made of glass. He is inclined to attribute the efficacy of derivation to the hyperemization of the part which it induces, and believes that the application of ice has a similar effect. His results agree with the modern theory that absorption occurs through the blood capillaries and not, as formerly supposed, through the lymph. He devotes considerable space to a review of the facts in regard to the hypertrophy of the part induced by active hyperemia, and shows that it is not a delusion but a fact, and may prove useful in aiding regeneration of parts. The bones frequently grow both in length and thickness, the epithelium proliferates and the connective tissue increases under the influence of both active and passive hyperemia. The effect of passive congestion is usually magical in gonorrheal joint affections, as in arthropathies of various kinds. Induced hyperemia is also effectual in the treatment of neuralgias and for promoting absorption in elephantiasis, effusions in the joints and extravasations, etc. Bier's various works have been reviewed in THE JOURNAL as published from time to time. His extensive experience has suggested a number of technical points to seek or avoid, which he enumerates, and has shown that the simplest apparatus is as effective as the most complicated.

148. **Tuberculin in Early Diagnosis of Pulmonary Affections.**—Freymuth considers Koch's old tuberculin as the most reliable, but places the limit of non-febrile temperature a little higher than Koch, 37.1 to 37.2 C. He commences with 1 mg. If there is no trace of a reaction he then injects 5 mg., in case of a suggestion of a reaction, only 3 mg. If a third injection is necessary, the amount is 5 mg., or in rare cases 8 mg. The reaction curve shows a very steep ascent after a small single dose, or a slight ascent after the first small dose and a steep ascent after the second. The first curve is the expression of quite recent infection. The second one is more frequent. Still another curve is observed in case of recent but very mild infection. There is no reaction to the small and medium dose, but the third induces a steep rise. He reviews his experience with 170 patients thus tested. He mentions that the sputa, after injection of tuberculin, frequently contain tubercle bacilli not discoverable before. The tuberculin test was particularly useful in a group of 17 cases in which chlorosis masked the tuberculosis. The patients were young women or girls and the lung findings were trivial, with very little expectoration. They all reacted strikingly to tuberculin and yet the few clinical signs of tuberculosis, merely slight roughness in breathing and minimal decrease in the resonance, were so insignificant that the idea of tuberculosis scarcely suggested itself. Chlorosis alone does not react to tuberculin. Those cases are suspicious in which the general health is much impaired with comparatively slight diminution in hemoglobin, and those which iron fails to benefit. In all the cases of tuberculosis which reacted positively to the test the infection was recent or active. In more chronic benign, smouldering or healed infection the test was frequently negative. The same occurs with the imperfectly healed or stationary cases. His experience seems to demonstrate that the reaction is more powerful the shorter the interval since infection, before the organism has had time to elaborate any immunizing substance against it. In diagnosing, a negative result may signify no tuberculosis, but does not inevitably exclude it. Its chief importance is for the diagnosis of incipient tuberculosis when all other means have failed to disclose it.

Therapeutische Monatshefte, Berlin.

Last indexed page 1546.

155 (No. 5.) The Limits of Normal Temperature. E. Franck.—Temperaturmessung und Fiebergrenze.

156 The Rudolph Spring at Marienbad. E. H. Kisch.—Die Rudolfsquelle in M.

157 Zur Behandlung der motorischen Aphasie und Agraphie nach apoplektischem Insult. H. Stadelmann.

158 New Esophagus Syringe. F. Schilling (Leipsic).—Eine neue Esophagusspritze.

159 A "Safety Pessary." A. Rahn.—Ein Sicherheitspessar mit Benutzung des Schatz'schen Ringes.

Zeitschrift f. diet. u. physik. Therapie, Berlin.

Last indexed page 477.

160 (VI, 10.) *Hygiene-Therapie der Syphilis. F. Block (Hanover).

161 The First Five Years of the "Zeitschrift." J. Marcuse.—Ein Rückblick.

162 New Technic for Making Bread for Diabetics. W. Bauermeister.—Ueber die Verwendung des Kaseins zu Backzwecken vermittels einen neuen Technik und über Diabetesbrote im allgemeinen, wie über das nach obiger Methode hergestellte (Salus-) Fabrikat im bes.

163 Hot Air Therapy. E. Rautenberg (Königsberg).—Zur Heissluftbehandlung. (Commenced in No. 9.)

164 Seasickness and Deep Breathing. F. Pavacini.—Seekrankheit und Tiefathmen.

165 Die Bedeutung der Precipitin-Reaction für die Ernährungstherapie (for dietetic treatment). L. Michaelis (Kiel).

166 (No. 11.) *Apparatus for Constant Heat, Especially in Cutaneous and Venereal Affections. K. Ullmann (Vienna).—Hydrothermoregulator.

167 Die klimatischen Kur-Orte. W. Velten (Bonn).

168 Value of Levulose in Children's Dietary. L. Fürst.—Die Bedeutung der Levulose für die Kinderdietetik.

169 Die Serum-Therapie der Streptokokken-Infektion. F. Meyer. Historical sketch; 52 articles on subject reviewed.

170 (No. 12.) Die Arbeit mit dem Hematokriten von H. Köppe. F. Engelmann.

171 *A Predecessor of Brand. J. Sadger.—Ein Vorgänger Brands.

172 *Abortiv-Behandlung der Furunkulose mittels überhitzter trockener Luft (with dry hot air). N. Reich (Budapest).

173 Latest Russian Works on Hypnosis. A. Dworetzky.—Ueber einige russische Arbeiten aus dem Gebiete der Hypnose.

174 (VII, 1-2.) Diet for Kidney Patients. P. K. Pel (Amsterdam).—Die Ernährung unserer Nierenkranken.

175 *Massage in Treatment of Affections of Testicles and Their Adnexa. J. Zabludowsky.—Zur Therapie der Erkr. der Hoden und deren Adnexe.

176 Excretion of Urine After Ingestion of Fluids. J. Glax (Abbazia).—Ueber das Verhältniss der Harnausscheidung zu den aufgenommenen Flüssigkeiten bei Gesunden und Kranken. Ibid. F. Tripold. The latter reports results of thirty months of auto-observation.

177 *Ueber Aronson's Streptokokkenserum. F. Meyer.

178 *Die spezifische Typhusbehandlung. H. A. Namann.

179 *Das neue Institut für physikalische Therapie in Rom. J. Marcuse (Manheim).

180 Experiments in Feeding Mice with Highly Sterilized Cow's Milk. A. Keller.—Fütterungsversuche, etc.

181 Influence of Mineral Waters on Composition of Blood. H. Dünschmann.—Ueber den Einfluss der Mineralwässer auf die Blutbeschaffenheit.
182 Full Report of First Annual German Preventive Congress, Frankfurt, March 9-10.

160. **Hygiene in Syphilis.**—Block believes that the syphilitic toxin exerts its injurious influence on the vessel walls and nervous system from the very start, the effects resembling those of dissipation, over-exertion or chronic alcoholism. The nervous system is already predisposed by the stress of our strenuous life. In a less complex civilization the nervous system is not predisposed and offers more resistance, and is consequently not affected to the same extent. All the causes which tend to lower the resistance of the nervous system should be guarded against. The patient should be instructed to retire early. The food should be nourishing with milk in abundance. Alcohol predisposes to the severer forms of the disease and both alcohol and tobacco should be used in moderation or abandoned. Syphilitics like to read about the disease, and thus fall an easy prey to charlatans. To meet this craving Block has written a pamphlet, requesting them to refrain from reading other works on the subject. He insists on the patients returning at certain intervals for inspection, and reiteration of the warnings, etc., endeavoring to combat the depression, neurasthenia and mild hypochondria so liable to accompany the disease. A course of mineral waters may be useful, but under other circumstances he advises continuing at business. The patient should be instructed that a body once invaded by syphilis is thereafter less resistant, especially in the nervous and vascular systems, and although he can live a normal life, like other persons, yet he must keep within the bounds of a rational mode of life and abjure excesses of all kinds.

166. **The Hydro-Thermo-Regulator.**—Ullmann's coils of pipe or rubber tubing sewed flat on a sheet of asbestos or duck, with a continuous current of hot or cold water through them, have been described in these columns. This present article is elaborately illustrated.

171. **The Inventor of the Brand Bath.**—Sadger claims for a German physician, Dr. Pingler, the priority for the exclusive treatment of typhoid fever with cold water. He reported, in 1850, 26 cases thus treated, the mortality reduced to 7.6 per cent.

172. **Abortive Treatment of Furuncles with Dry Hot Air.**—Reich was impressed with the efficacy of this application in the abortion of 4 cases of incipient furuncles. None came to suppuration or necrosis. He thinks that if we restrict this "thermo-aerophor treatment," as he calls it, to true furuncles, and do not attempt to apply it in cases of deep-seated cellulitis or too late in the affection, we will never experience a failure.

175. **Physical Therapeutics for Affections of Testicles and Their Adnexa.**—Zabludowsky is in charge of the Berlin University Institute for Physico-Therapy and his report of the benefits derived from these measures has appeared in a number of our foreign exchanges, both French and German. The present article is copiously illustrated, and gives detailed directions for massage of the testicles, seminal cords, perineum and adjacent muscles, for cases of lingering inflammation of these parts of traumatic or gonorrheal origin, atrophy and functional disorders associated with nervous or psychic symptoms.

177. **Aronson's Streptococcus Serum.**—Meyer has used this serum in 18 cases, and states that the results were brilliantly successful in 3 cases of erysipelas, one of bilateral tonsillitis and one of severe puerperal infection. On the other hand, in several others the results were dubious, and in 2 others of erysipelas, 2 of scarlet fever, and 6 of septicemia, the results were entirely negative. The 5 successes encourage further trials and attempts to learn the reason for its failure in the other cases.

178. **Specific Treatment of Typhoid.**—Nammann has been able to collect 141 works on this subject. The general conclusions are favorable.

179. **The Rome Institute for Physical Therapeutics.**—Marcuse writes in longing envy of the beautiful and commodious model institute recently completed at Rome. The first floor is fitted up in classic style in imitation of the hot baths of the ancients, a most successful combination of the old Roman and Pompeiian baths, with modern comfort. The heating apparatus is beneath the floor, as in the ancient baths. The second floor is fitted up with the usual appliances of such an institution, with an amphitheater for teaching purposes, as the institution is affiliated with the university.

Gazzetta degli Ospedali, Milan.

Last indexed page 1766.

183 (XXIV, 35.) Contributo alla teoria infettiva del rachitismo. A. Amantini.
184 Contributo alla cura dell'ernia crurale strozzata. R. Penzo.
185 L'estratta antitifico "Jez" in 2 casi gravissimi di "ileo-tifo." G. Casardi.
186 La cura della gonorrea col massagio prostatico. P. Adolfo.
187 Hernia in Respect to Industrial Accidents. G. Egisto and B. Luigi.—L'ernia in rapporto colla legge sugli infortuni del lavoro.
188 (No. 38.) *Graphic Determination of Renal Functioning. S. Mircoli.—Forma di lavoro renale, sua grafica e significato.
189 Contributo allo studio del cancro della mammella. L. Baldassari.
190 Influence of Innervation on Healing of Fractures. R. Penzo.—Influenza dell' innervazione sulla guarigione delle fratture. Experimental.
191 Four Cases of Alopecia of Dental Origin. Gravagna.—Pelade d'origine dentaria.
192 La digitale ad alte dosi nella cura della polmonite lobare. P. Monetti.
192½ (No. 41.) *Sugli effetti della palpazione renale. G. P. Morano (Galvagni's clinic, Modena).
193 Cura radicale della fistola intestinale e dell'ano preternaturale. G. C. Vinci (Messina).
194 Sulla presenza del Nucleone nella sperma e nel vitreo. E. Cavazzani.
195 2 casi di Tetano curato e guarito col metodo Baccelli. P. A. Corte.
196 Injections of Hydrogen Dioxid in Broncho pneumonia in Infants. B. Romano.—La broncopolmonite da influenza nei bambini e l'uso delle iniegioni di acqua ossigenata nel periodo di asfissia.

188. **Graphic Tracings of Kidney Functioning.**—Mircoli proclaims that very important information may be obtained from study of the specific gravity of the urine determined at different hours during the day. His research shows that the curve of the volume of water runs parallel to the curve of the specific gravity at different hours in normal subjects, but in case of kidney affections there is no parallelism and the kidney functions show various other aberrations. Among these is the absence of the normal diminuendo in kidney functioning observed during sleep. It seems as if in health the kidney slumbered also, while in case of a pathologic organ it may be functioning most intensely during sleep. The kidney, in comparison with the normal organ, behaves like a heart with tachycardia one-quarter and bradycardia three-quarters of every hour, or like a clock that gains time during the first quarter, but loses enough during the rest of the hour to nearly make it up or lose more. He has found the most convenient formula for this determination of renal functioning to be the specific gravity, computed for 1 c.c. of urine, multiplied by the number of centimeters of urine voided at all the natural urinations, this product divided by the number of hours. The result indicates the work actually done by the kidney and by determining it at various hours in the day a characteristic curve is obtained which will afford insight into the relations between renal functioning and the meals, exercise, sleep, etc., the number of urinations a day, the limits of the range of kidney functioning and the uniformity or irregularity of elimination of water and other substances. In health the curves from day to day always coincide at certain points, usually on rising, and at 10 a. m. After meals the kidneys work less at first and then resume their former activity. He suggests to accept 1 degree of specific gravity as the unit for renal functioning. The curve showing the amount of water parallels that of the specific gravity, except after ingestion of water or readily absorbed substances. After the critical elimination of this extra amount, the parallelism is resumed. It shows that the kidney in health always requires a given amount of water to eliminate a given amount of excrementitious substance, indicating harmony and co-ordination between the glomerular and canalicular apparatus. The lack of this parallelism in pathologic conditions is striking, and the way in which the curves cross and recross, capriciously to all appearance. In one instance he

noted this erratic curve after the kidney affection had been clinically completely cured. He urges others to study the curves of renal functioning and endeavor to determine their precise significance.

192½. **Effects of Palpation of Kidney.**—Morano concludes from his clinical experience corroborated by experimental research, that massage, or even palpation, has a directly injurious action on the kidney, especially if unusually accessible to the manipulations.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

The Practical Application of the Roentgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois; and Eugene W. Caldwell, B.S., Director of the Edward N. Gibbs X-Ray Memorial Laboratory of the University and Bellevue Hospital Medical College, New York. Cloth. Pp. 591. With 180 Illustrations, Nearly all Clinical. Price, $4.50 Net. Philadelphia: W. B. Saunders & Co. 1903.

Progressive Medicine. Fifth Annual Series. Vol. II, June, 1903. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Cloth. Pp. 427. With 46 Illustrations. Price, Per Volume, $2.50. Per Annum, in Four Cloth-Bound Volumes, $10.00. Philadelphia and New York: Lea Brothers & Co.

Report of Streams Examination, Chemic and Bacteriologic, of the Waters Between Lake Michigan at Chicago and the Mississippi River at St. Louis, for the Purpose of Determining Their Condition and Quality Before and After the Opening of the Drainage Channel. Made Under the Direction of Arthur R. Reynolds, M.D., Commissioner of Health, City of Chicago. Pasteboard. Chicago: Blakely Printing Company. December, 1902.

Physiological Aspects of the Liquor Problem. Investigations Made by and Under the Direction of W. O. Atwater, John S. Billings, H. P. Bowditch, R. H. Chittenden and W. H. Welch, Sub-Committee of the Committee of Fifty to Investigate the Liquor Problem. Vols. I and II. Cloth. Pp. 396 and 379 Respectively. Price, $4.50 Net Per Set. Boston and New York: Houghton, Mifflin & Co. 1903.

A Text-Book of Chemistry. For Students of Medicine, Pharmacy and Dentistry. By Edward Curtis Hill, M.S., M.D., Medical Analyst and Microscopist; Professor of Chemistry and Metallurgy in the Colorado College of Dental Surgery. With 78 Illustrations, Including 9 Full-page Halftone Colored Plates. Pp. xii-523. Cloth. Price, $3.00 Net. Philadelphia: F. A. Davis Company.

Postmortem Pathology. A Manual of Postmortem Examinations and the Interpretations to Be Drawn Therefrom. A Practical Treatise for Students and Practitioners. By Henry W. Cattell, A.M., M.D., Pathologist to the Philadelphia Hospital. With 162 Illustrations. Cloth. Pp. 372. Price, $3.00. Philadelphia and London: J. B. Lippincott Co. 1903.

Jahresbericht über die Fortschritte in der Lehre von den Pathogenen Mikro-organismen unfassend Bacterien, Pilze und Protozoen unter Mitwirkung von Fachgenossen bearbeitet und herausgegeben von Dr. med. P. von Baumgarten, und Dr. med. F. Tangl. Siebzehnter Jahrgang, 1901. Erste Abtheilung. Paper. Pp. 560. Leipzig: Verlag von S. Hirzel. 1903.

Analysis of the Sexual Impulse—Love and Pain—The Sexual Impulse in Women. Third Volume in Series, "Studies in the Psychology of Sex." By Havelock Ellis, L.S.A. (England); Fellow of the Medicolegal Society of New York and Anthropological Society of Berlin. Cloth. Pp. 266. Price, $2.00 Net. Philadelphia: F. A. Davis Company.

A Text-Book of Modern Materia Medica and Therapeutics. By A. A. Stevens, A.M., M.D., Lecturer on Physical Diagnosis in the University of Pennsylvania. Third Edition. Greatly Enlarged, Rewritten and Reset. Cloth. Pp. 663. Price, $3.50 Net. Philadelphia: W. B. Saunders & Co. 1903.

Ocular Therapeutics, According to the Most Recent Discoveries. By Dr. A. Darier. Translated by Sydney Stephenson, M.B., C.M., Honorary Secretary to the Ophthalmologic Society of the United States. Cloth. Pp. 278. Price, $3.00 Net. Philadelphia: P. Blakiston's Son & Co. 1903.

The Expectant Mother. A Treatise of the Care of the Expectant Mother During Pregnancy and Child-Birth and the Care of the Child from Birth to Puberty. By W. Lewis Howe, M.D. Cloth. Pp. viii-63. Price, $0.50 Net. Philadelphia: F. A. Davis Company.

Surgical Asepsis. Especially Adapted to Operations in the Home of the Patient. By Henry B. Palmer, M.D., Consulting Surgeon to the Central Maine General Hospital. 90 Illustrations. Cloth. Pp. vi-231. Price, $1.25 Net. Philadelphia: F. A. Davis Company.

Thirty-Ninth Annual Report of the Trustees of the Boston City Hospital, Including the Report of the Superintendent. For the Thirty-ninth Year, Feb. 1, 1902, to Jan. 31, 1903, Inclusive. Paper. Pp. 190. Boston: Municipal Printing Office. 1903.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Volume VII. Hernia Inquiry. Cloth. Pp. 1,003. Washington: Government Printing Office. 1902.

Disease of the Pancreas. Its Cause and Nature. By Eugene L. Opie, M.D., Associate in Pathology in the Johns Hopkins University. Cloth. Pp. 359. Price, $3.00. Philadelphia and London: J. B. Lippincott Company. 1903.

Twenty-Second Annual Report of the State Department of Health of New York. With Maps. For the Year Ending Dec. 31, 1901. Cloth. Pp. 632. Albany: J. B. Lyon Company. 1902.

The Buckeye Doctor. A Tale for Physicians and for Physicians' Patients. By William W. Pennell, M.D. Cloth. Pp. 345. Price, $1.50. New York: The Grafton Press.

The Public Service.

Army Changes.

Movements of Officers of the Medical Department, U. S. A., under orders from the Adjutant-General's Office, Washington, D. C., for the two weeks ending June 13, 1903:

Appel, Daniel M., major surgeon, now at San Francisco, will proceed to Denver and report to the commanding general, Department of the Colorado, for further orders.

Chaffee, Jerome S., first lieut. and asst.-surgeon., is granted leave of absence, to include July 1, 1903, to take effect on his relief from duty at Fort Porter. The resignation of the above has been accepted, to take effect July 1, 1903.

Collins, G. L., first lieut. and asst.-surgeon, is granted leave for ten days from about June 14.

Daywalt, George W., contract surgeon, will, on the arrival at Fort Schuyler of Asst.-Surgeon Charles N. Barney, proceed to the artillery, District of Portland, and report to the district commander at Fort Preble for temporary duty at Fort Levett. When his services are no longer required in connection with the Army and Navy maneuvers he will, when relieved by the district commander, return to his station.

De Witt, Wallace, first lieut. and asst.-surgeon, now under treatment and observation at Fort McPherson, will proceed to Fort Porter for duty, to relieve First Lieut. Jerome S. Chaffee.

Duval, Douglas F., first lieut. and asst.-surgeon, is granted two months' leave of absence on surgeon's certificate.

Gregory, William G., contract surgeon, is relieved from further duty in the Division of the Philippines and, on the expiration of his present sick leave, will proceed to Fort Apache for duty.

Hart, James W., contract surgeon, will proceed from Fort Washington to the artillery, District of Portland, and report to the district commander for assignment to a station where his services may be needed. At the close of the maneuvers he will return to Fort Washington with the Thirty-seventh company.

Juenemann, George F., contract surgeon, now in Washington, D. C., will proceed to Fort Columbus for duty.

Pease, Louis W., contract surgeon, is granted an extension of one month's leave on surgeon's certificate.

Roberts, D. M., contract surgeon, is granted an extension of leave for two months.

Whitcomb, Clement C., first lieut. and asst.-surgeon, now at San Francisco, is relieved from further duty in the Division of the Philippines and will proceed to Governor's Island, N. Y., and report to the commanding general, Department of the East, for assignment to duty pertaining to the Army and Navy maneuvers during the ensuing year.

Stedman, Chester J., contract surgeon, now in Washington, D. C., will proceed to Fort Adams for duty.

Navy Changes.

Changes in the Medical Corps of the Navy for the two weeks ended June 20:

Surgeon L. W. Spratling, detached from the Navy Yard, New York, and ordered to the *Columbia*.

Surgeon P. Leach, detached from the *Columbia* and ordered to the *Massachusetts*.

A. A. Surgeon W. H. Block, detached from the Naval Recruiting Station, Chicago, and ordered to Navy Yard, New York.

Surgeon J. M. Steele, detached from the *Massachusetts* and granted leave for six months.

Surgeons Means, Cordeiro, Wieber, Norton, Kite, Wentworth, Decker, Berryhill, Stone, Pickrell, Crandall, Harris, Urie, McCormick, Arnold, Wilson, Stokes, Stitt, Gates, Lowndes, Barber, Rothganger, Smith, Lung, Von Wedekind, Bogert, Spratling, Kennedy, Blackwood, Braisted and Evans, commissioned surgeons, with rank of lieut.-commander, from March 3.

P. A. Surgeons Orvis, Kerr, Grow, Grunwell, Langhorne, Thompson, Benton, Garton, McCullough, Furlong, Angeney, Bell, Curl, Holcomb, Parker, Wright, Plummer, Odell and Taylor, commissioned passed asst.-surgeons, with rank of lieutenant, from March 3.

P. A. Surgeon D. H. Morgan, detached from the *Boston* and ordered to Naval Hospital, Mare Island, for treatment.

Drs. W. H. Rennie, W. W. Werner, O. Kohlhase and P. S. Rossiter, appointed asst.-surgeons from May 25.

Drs. W. B. Smith and W. S. Hoen, appointed asst.-surgeons from June 2.

Medical Director C. U. Gravatt, retired on account of disability incurred in active service.

Medical Director F. Anderson, detached from the *Alabama* and ordered to the *Brooklyn*.

Surgeon J. C. Byrnes, ordered to the *Texas*.

Surgeon C. J. Decker, ordered to the *Alabama*.

Surgeon C. F. Stokes, ordered to the Navy Yard, League Island, Pa.

Surgeon G. Pickrell, detached from the *Texas* and ordered to the *Iowa*.

P. A. Surgeon R. K. Smith, detached from the *Independence* and ordered to duty at the Naval and Marine Recruiting Stations, San Francisco.

P. A. Surgeon C. P. Kindelberger, detached from the *Iowa* and ordered home to await orders.

P. A. Surgeon A. Farenholt, detached from the *Boston* and ordered to the *Concord*.

Asst.-Surgeon M. K. Elmer, detached from the *Ranger* and ordered to the *Independence*.

Pharmacist W. H. Huntington, retired from active service on account of disability incident to service.

Medical Director J. B. Parker, retired from active service from June 20, under provisions of Section 1454, R. S.

Medical Inspector F. Anderson, commissioned medical inspector from January 31.

P. A. Surgeon J. S. Taylor, commissioned past asst.-surgeon from Nov. 8, 1902.

Drs. J. D. Manchester, P. T. Dessez and J. S. Woodward, appointed asst.-surgeons from June 10.

Medical Inspector S. H. Dickson, ordered home to wait orders.

P. A. Surgeon L. Morris, detached from the *Puritan* and ordered to the *Florida*.

A. A. Surgeon W. P. Keene, detached from the *Truxtun* and ordered to duty with the second torpedo flotilla.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the fourteen days ended June 18, 1903:

Surgeon D. A. Carmichael, leave of absence for seventeen days from May 19 granted by Bureau letter of May 9, amended so that it shall be for thirteen days only.

P. A. Surgeon J. M. Eager, granted leave of absence for two months from August 1.

P. A. Surgeon C. H. Gardner, granted leave of absence for seven days.

P. A. Surgeon H. B. Parker, directed to report at Washington, D. C., for temporary duty.

Asst.-Surgeon C. W. Vogel, granted leave of absence for one month from June 8.

Asst.-Surgeon B. J. Lloyd, to report to P. A. Surgeon R. Blue, Plague Laboratory, San Francisco, for temporary duty.

A. A. Surgeon J. E. Bready, granted leave of absence for three days.

A. A. Surgeon A. P. McConnell, granted leave of absence for two days from June 10.

A. A. Surgeon W. C. Mason, granted leave of absence for ten days from June 17.

A. A. Surgeon J. C. Rodman, granted leave of absence for thirty days from June 20.

A. A. Surgeon W. S. Walkley, granted leave of absence for seven days from June 11.

Pharmacist G. C. Allen, granted extension of leave of absence for twenty-three days from June 5.

Assistant Surgeon-General A. H. Glennan, detailed as assistant surgeon-general in charge of the Domestic Quarantine Division in the Bureau of Public Health and Marine-Hospital Service.

Surgeon J. B. Stoner, granted leave of absence for one month from June 30.

P. A. Surgeon M. J. Rosenau, to proceed to Greenpoint, N. Y., for special temporary duty.

P. A. Surgeon J. A. Nydegger, relieved from duty at Cincinnati and directed to proceed to Sault Ste. Marie, Mich., as inspector of immigrants.

P. A. Surgeon E. K. Sprague, granted leave of absence for seven days from June 4, under Paragraph 191 of the regulations.

P. A. Surgeon S. B. Grubbs, Bureau telegram of May 13, 1903, granting P. A. Surgeon Grubbs leave of absence for one month, amended so that said leave shall be for one month from May 23.

Asst.-Surgeon C. E. Decker, granted extension of leave of absence, on account of sickness, for twenty-two days from June 9.

Asst.-Surgeon C. E. D. Lord, relieved from duty at Galveston, Texas, and directed to report to medical officer in command at San Francisco Quarantine for assignment to special duty.

A. A. Surgeon H. C. Sibree, granted leave of absence for six days from June 16.

Pharmacist C. G. Carlton, granted leave of absence for thirty days from June 1.

BOARDS CONVENED.

Board convened for the examination of Asst.-Surgeon M. K. Gwyn to determine his fitness for promotion to the grade of passed assistant-surgeon. Detail for the board: Assistant Surgeon-General L. L. Williams, chairman; Assistant Surgeon-General W. J. Pettus; Asst.-Surgeon V. G. Heiser, recorder.

Board convened for the examination of Asst.-Surgeon W. C. Hobdy to determine his fitness for promotion to the grade of passed assistant-surgeon. Detail for the board: Assistant Surgeon-General L. L. Williams, chairman; Assistant Surgeon-General W. J. Pettus; P. A. Surgeon L. E. Cofer, recorder.

Board convened at San Francisco, June 8, for the physical re-examination of an officer of the Revenue Cutter Service. Detail for the board: Asst.-Surgeon Carl Ramus, chairman; Asst.-Surgeon C. W. Vogel, recorder.

Board convened at Washington, D. C., June 10, to review testimony and make recommendation in case of Asst.-Surgeon F. J. Thornbury. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Surgeon H. W. Sawtelle; Surgeon D. A. Carmichael, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the two weeks ended June 20, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, May 30-June 3, 3 cases.

California: Fresno, May 1-31, 13 cases; Los Angeles, May 23-June 6, 5 cases; San Francisco, May 24-June 7, 5 cases.

Colorado: Denver, May 2-23, 70 cases.

Connecticut: Stamford, May 1-31, 1 case.

Florida: Baker County, June 6-13, 1 case; Columbia County, May 23-30, 1 case; Duval County, May 23-June 13, 7 cases; Escambia County, Pensacola, May 23-June 13, 3 cases; Leon County, May 23-30, 5 cases; Levy County, June 6-13, 10 cases.

Georgia: Atlanta, May 28-June 3, 2 cases.

Illinois: Belleville, June 6-13, 3 cases, 1 death; Chicago, May 31-June 6, 12 cases; Danville, May 31-June 6, 1 case.

Indiana: Evansville, June 6-13, 2 cases; Indianapolis, May 31-June 6, 2 cases.

Iowa: Des Moines, May 31-June 6, 1 case.

Louisiana: New Orleans, May 31-June 13, 5 cases.

Maine: Bucksport, June 3, 1 case.

Maryland: Baltimore, May 30-June 6, 1 case.

Massachusetts: Fall River, May 30-June 6, 9 cases; Holyoke, May 31-June 6, 2 cases.

Michigan: Detroit, May 28-June 13, 28 cases, 1 death; Flint, May 23-June 13, 3 cases; Grand Rapids, May 28-June 13, 7 cases; Port Huron, June 1-13, 2 cases.

Minnesota: Winona, May 30-June 13, 2 cases, 1 death.

Nebraska: Omaha, May 29-June 6, 3 cases.

New Hampshire: Nashua, May 29-June 13, 16 cases.

New York: New York, May 29-June 6, 1 case; Rochester, May 24-June 7, 3 deaths.

Ohio: Cincinnati, May 28-June 13, 7 cases, 1 death; Cleveland, May 30-June 6, 5 cases; Dayton, June 6-13, 6 cases; Hamilton, May 30-June 13, 2 cases; Toledo, May 16-30, 8 cases.

Pennsylvania: Altoona, May 29-June 6, 3 cases; Erie, May 29-June 6, 1 case; Johnstown, May 29-June 6, 1 case; McKeesport, May 29-June 13, 4 cases, 1 death; Philadelphia, May 29-June 6, 31 cases, 4 deaths; Pittsburg, May 29-June 6, 9 cases, 6 deaths.

Rhode Island: Warwick, June 8-15, 4 cases.

South Carolina: Charleston, May 28-June 13, 6 cases.

Tennessee: Memphis, May 23-June 6, 6 cases; Nashville, May 23-30, 1 case.

Texas: San Antonio, May 1-31, 2 cases.

Utah: Salt Lake City, May 31-June 6, 23 cases.

Wisconsin: Milwaukee, May 23-June 13, 70 cases.

SMALLPOX—INSULAR.

Hawaii: Honolulu, May 7, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, May 16-23, 4 cases.

Belgium: Antwerp, May 16-23, 6 cases; Brussels, May 16-23, 8 deaths.

Brazil: Rio de Janeiro, May 3-10, 5 deaths.

Canada: Amherst, N. S., June 12, 3 cases; Fredericton, N. B., June 12, 5 cases.

Canary Islands: Las Palmas, May 9-16, 18 cases.

China: Hongkong, April 11-25, 2 deaths; Shanghai, April 24-May 2, 3 deaths.

Colombia: Barranquilla, May 17-31, 1 case, 1 death; Bocas del Toro, May 19-June 2, epidemic.

France: Paris, May 8-30, 3 deaths.

Great Britain: Birmingham, May 23-30, 7 cases; Bradford, March 30-May 23, 100 cases, 5 deaths; Bristol, May 23-30, 1 case; Dublin, May 16-30, 26 cases, 4 deaths; Dundee, May 8-16 and 23-30, 10 cases; Leeds, May 23-30, 21 cases, 3 deaths; Liverpool, May 16-30, 82 cases, 10 deaths; London, May 16-30, 29 cases; Manchester, May 16-23, 14 cases; Newcastle-on-Tyne, May 8-16 and 23-30, 4 cases, 1 death; Nottingham, May 16-23, 2 cases; Sheffield, May 8-16 and 23-30, 5 cases; South Shields, May 8-16 and 23-30, 2 cases; Sunderland, May 23-30, 1 case; West Hartlepool, May 16-23, 2 cases.

India: Bombay, May 5-19, 111 deaths; Calcutta, April 11-18, May 2-16, 6 deaths.

Japan: Kobe, April 25-May 2, 6 cases.

Mexico: City of Mexico, May 17-31, 31 cases, 13 deaths.

Russia: Moscow, May 8-23, 8 cases, 2 deaths; Odessa, May 16-30, 4 cases, 1 death; St. Petersburg, April 25-May 30, 1174 cases, 24 deaths; Warsaw, April 18-May 16, 10 deaths.

Straits Settlement: Singapore, April 18-May 2, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, May 3-10, 8 cases.

Colombia: Panama, May 18-June 1, 10 cases, 6 deaths.

Costa Rica: Limon, May 21-June 4, 7 cases, 3 deaths.

Mexico: Coatzacoalcos, May 23-30, 1 case, 1 death; Progreso, June 3, 1 case; Tampico, May 23-June 8, 34 cases, 14 deaths; Vera Cruz, May 23-June 6, 42 cases, 12 deaths.

CHOLERA—INSULAR.

Philippines: Manila, April 11-May 2, 52 cases, 47 deaths; Provinces, April 11-May 2, 1,342 cases, 729 deaths; not previously reported, 81 cases, 79 deaths.

CHOLERA—FOREIGN.

China: Canton, May 8, 50 deaths; Hongkong, May 1-8, 2 cases.

India: Bombay, May 5-19, 1 death; Calcutta, April 11-18, May 2-16, 254 deaths.

Turkey: Dasmascus, March 29-April 16, to May 15, 94 cases, 117 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, June 5, 1 death.

PLAGUE—FOREIGN.

Africa: East London, April 12-25, 2 cases; King Williams Town, April 12-25, 5 cases; Port Elizabeth, April 12-25, 15 cases.

China: Hongkong, April 11-25 and May 1-8, 225 cases, 202 deaths.

India: Bombay, April 11-18 and May 5-19, 740 deaths; Calcutta, April 11-18 and May 2-16, 758 deaths; Karachi, May 3-17, 332 cases, 292 deaths.

Japan: Yokohama, May 8-16, 2 deaths.

Peru: Callao, May 3-12, 10 cases, 6 deaths.

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Address.

THE STATUS OF THE SECTION ON OPHTHALMOLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON OPHTHALMOLOGY, AT THE FIFTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, AT NEW ORLEANS, MAY 5-8, 1903.

JOHN E. WEEKS, M.D.
NEW YORK.

The By-laws of the American Medical Association provide that the chairman of each section shall present "an address on recent advances in the branches belonging to his Section, including such suggestions in regard to improvements or methods of work as he may deem important." This defines the character and limits the scope of his address and is, no doubt, a wise provision. Certain departures from the letter of the law are, I infer, permissible and, in pursuance of this belief, I shall digress sufficiently to welcome you all most heartily to this session of the Section, also to offer you my sincere thanks for the splendid manner in which you have supported the officers of the Section in their endeavor to present a program full to overflowing of valuable papers.

Some years ago Dr. Casey A. Wood, acting under Section 3 of the Constitution, which empowers officers of Sections to invite distinguished physicians of foreign countries to become members of the Association for the year and to participate in the affairs of the Section, endeavored to have a distinguished ophthalmologist of Paris attend the session of the Section. An invitation was extended and accepted, but at the last moment word was received that it was impossible for the gentleman to be with us. Last year our then chairman, Dr. Frank Allport, gave us the privilege and pleasure of meeting Professor Haab of Zurich, Switzerland, and of welcoming him to our country and to full participation in the affairs of our Section.

The precedent established by my able predecessors is one that, in my opinion, should be continued, not only because it serves to bring us in contact with men who are leaders in our branch of medicine, but because of the incentive to better work that such contact engenders. I have endeavored to emulate the example set me, with results similar to those of Dr. Wood.

The Section on Ophthalmology of the American Medical Association should be, as I believe it now is, the representative body of ophthalmologists in the United States. Its membership area is wider than that of any other society. As a part of a great Association of representative medical men, it has collateral support, and it is founded on a Constitution and governed by By-laws sufficiently broad and liberal to permit of indefinite expansion. The method of officering the Section provides against the danger of the domination of cliques and of the continuation of officers through courtesy or otherwise that might endanger its activity. The possibilities of the Section are great, and we should all endeavor to cause these possibilities to be realized by lending our influence to the production of work of the highest order and by making the meeting of the Section of the greatest possible interest.

The inducements to become identified with the Section are more than those afforded by any other association of ophthalmologists in this country. Some of them may be enumerated. First, contact with representative colleagues from all parts of the United States. Second, the assurance of large attendance. Third, the publication of accepted papers and the discussions of these papers in a journal having a larger circulation than any other medical journal in the United States, as well as the publication of papers and discussions in a bound volume of transactions at a nominal cost.

In regard to the volume of transactions, the chairman would suggest that an opportunity be afforded to every member of the Section, whether he be present or not, to obtain a copy. This could be satisfactorily arranged by the Executive Committee.

It is scarcely necessary that your chairman should mention to any extent the recent advances in ophthalmology. These will be presented in better form and more *in extenso* by the members of the Section in the session on which we are now entering. Some lines of research which promise much to careful workers may be mentioned: The effect of the *x*-rays and of the Finsen rays on neoplasms, detached retina, deep inflammatory processes and suppurative processes deserves more study. The study of the bacteriology of the eye is not yet exhausted; there are still some acute processes, apparently of bacterial origin, the causative agent of which is not known, among which may be mentioned Parinaud's conjunctivitis, trachoma and some of the suppurative diseases of the cornea. The question of the value of subconjunctival, intra-orbital and intrabulbar injections is yet in a chaotic state. This is a question which possesses potentials for much good to our patients. An exhaustive paper on orbital neoplasms, embracing the results of a careful study of all varieties by modern methods, would be heartily welcomed by all ophthalmologists.

Original Articles.

THE VALUE OF ENTEROSTOMY IN SELECTED CASES OF PERITONITIS.*

F. B. LUND, M.D.
BOSTON.

Among the many serious aspects in which that protean disease, appendicitis, is presented to the surgeon, there is none more alarming than the types in which diffuse peritonitis is attended with intestinal paralysis and distention of the abdomen. Here we have in addition to the already severe septicemia due to absorption from the peritoneum, a toxemia from absorption of the poisonous products of stagnating feces in the intestine, and the great depression produced by gaseous distention of the bowel. The mechanical interference with the descent of the diaphragm renders respiration feeble and shallow, interferes with the aëration of the blood, and adds the grave complication of asphyxia to tax the failing strength of a patient already almost exhausted. It is hard to conceive of a more certainly fatal form of assault on the organism.

We all, as surgeons, are familiar with the insidious and dangerous character of those cases of appendicitis which are so often sent to our hospitals with a diagnosis of "intestinal obstruction"—cases in which with a normal or slightly elevated temperature and local signs perhaps indefinite, the great distention of the abdomen, the bright eyes, blue lips, and dry tongue tell the story of a diffuse peritonitis with intestinal paralysis, and warn us of the gravity of the case with which we have to deal.

It is in cases of this sort that we find the greatest difficulties in the operation, and must look most sharply for complications in the after-care, and it is to the treatment of cases of this type that I would briefly invite your attention. So dangerous seems to me this type of the disease that I can truly say that I would rather meet a case of diffuse peritonitis involving the whole abdominal cavity without paralytic distention of the bowel, than a more localized and dry form of the disease in which this complication is present.

A brief consideration of the nature and causation of this distention which we call paralytic is necessary to our further argument. This distention is a complex phenomenon in which several causes may reasonably play a part. In its production may be concerned: First, obstruction of the bowel by angulation, due to fresh fibrinous adhesions, and the prevention of peristalsis by these same adhesions when they involve an extended area of the bowel. Adhesions of this type are found early in the dry type of diffuse peritonitis.

A second causative factor may be the laming of the smooth muscular fibers by the infiltration of the intestinal wall with inflammatory products. In the early stages of appendicitis it is well recognized that the infiltration of the intestine in the region of the ileocecal valve may temporarily paralyze a local section of the bowel, and result in vomiting and distention which passes off as the disease subsides or is operated on.

A third causative factor may be the paresis of the musculo-nervous peristaltic apparatus by the effect of toxins absorbed by the central nervous system. The paresis resulting from this last cause may, for the purposes of our argument, be disregarded, as it will occur only in the latest stages of septicemia, and after our patient is reduced to the deepest stages of exhaustion by the absorption of toxic products.

In the cases in which distention comes on early in an attack before the patient is profoundly septic or soon after an operation, it is undoubtedly due to one of the first two causes, namely, adhesions from fresh fibrinous exudate, or paralysis of the musculo-nervous apparatus of peristalsis by the presence of exudate in the intestinal wall. Of these two causes, the first is probably the more important.

When we consider the complexity in the shape and position of the intestine, and the importance of free mobility both to the production of peristalsis and the prevention of obstruction, it seems remarkable that paresis and obstruction are not universal accompaniments of peritonitis. It is obvious that a central peritonitis, such as arises when the appendix or other infecting organ is centrally situated, among the freely movable coils of small intestine will be more apt to cause intestinal paresis than a peripheral process situated, for instance, on the outer side of the fixed ascending colon, and between the latter and the abdominal wall.

The greater comparative fixation and the greater caliber of the large intestine render it less liable to kinking from fresh fibrinous adhesions than the small intestine.

Distention due to the first cause, angulation or compression by adhesions is more properly termed obstruction than paresis. Kinking many follow a local process, an adhesion at a single point, and result in distention of the entire intestine above that point. Multiple and extensive adhesions to other viscera and the abdominal wall may result in multiple angulations, and at the same time hamper the intestinal muscles, and these two processes may be associated in a greater or less degree with actual laming of the muscle itself by infiltration about and between the fibers. The exact part played by either process does not interest us, as the result is the same and the treatment indicated is the same, namely, to furnish a safe and easy exit to the contents of the over-distended bowel in order to allow it to collapse and recover its muscular tone.

In the milder cases it may be sufficient to stimulate peristalsis by irritating enemata of turpentine, glycerin and Epsom salts, and remove by the use of the rectal tube the obstruction from the contraction of the sphincter. These methods should be and are, of course, always tried before resorting to enterostomy. Enterostomy is a serious procedure; it subjects the patient certainly to the annoyance and discomfort of a fecal fistula, and generally to the danger of a secondary operation for the closure of the opening. The operation is, however, a simple one; it may be performed under local anesthesia, and the secondary operation is generally also simple and safe. It is proposed only in cases practically moribund from septicemia, asphyxia, from pressure upon the diaphragm, and often continually vomiting feces. The rescue of a few of these patients who, if let alone, are face to face with certain death, is certainly an adequate recompense for the slight inconvenience of the operation and the fecal fistula. In these cases, then, after other means have failed, the operation, it seems to the writer, is distinctly indicated, and in his experience and that of his colleagues it has been the means of saving valuable lives.

Local anesthesia avoids the special danger of a general anesthetic in these cases, namely, depression and inhalation of vomitus.

A word as to the time for the operation. Certain surgeons, among them Dr. Mixter of Boston, advocate in cases of diffuse peritonitis with distention, the establishment of an outlet for gas and feces at the primary operation by the simple procedure of incising the cecum and tying in a glass tube. This tube may be removed in four or five days after distention has been relieved and adhesions formed about the wound, and it is said that the fecal fistula rarely remains for so long a time as to require an operation.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

The writer, however, has felt that a fecal fistula should not be established except as a last resort. He has had such good results from the free incision of the intestine and suture of the wound after emptying the bowel, and perhaps injecting a saturated solution of Epsom salts at the time, that he has deemed it wiser to limit the primary interference to the above-mentioned procedure, associated, of course, with drainage of the abdomen and the usual procedures for the treatment of the peritonitis. Enterostomy should, in his opinion, be reserved for those cases in which, after the primary operation, enemata have failed to move the bowels, and the patient's life is endangered by distention. Thus the patient is not subjected to the annoyance of a fecal fistula till other means have been tried, and both patient and operator are satisfied of its necessity.

This reasoning does not apply, however, to cases in which the operation is done on patients living at a distance who can not be under the surgeon's immediate personal care. Under these circumstances the writer believes it wiser to open the bowel at the primary operation rather than run the risk of the patient's dying from paralytic distention before he can reach him for the secondary procedure.

In a case of general peritonitis with distention operated on this winter in the country, the writer did not open the bowel at the primary operation and returned to the city. The attending physician was kept away during the night following the operation by an obstetric case, and could not open the bowel, and the patient died of extreme paralytic distention early in the morning of the day following the operation.

Under such circumstances, immediate ileostomy or cecostomy would be distinctly advisable.

Instead of opening the cecum the writer has opened the small intestine, for the following reasons:

1. The fibrinous adhesions which cause the obstruction are probably located in the region of the ileocecal valve, and affect the small intestine above that valve. It is manifestly important to open the bowel above the point of obstruction, therefore a coil of small intestine which by distention shows that it is above the main point of obstruction is chosen.

2. The difficulty of the operation for resection and closure of a fecal fistula in the small intestine has, in the writer's hands, been considerably less than a similar operation on the cecum, because the small intestine can be brought outside the abdomen and operated on extraperitoneally, which is not always the case with the cecum. Lennander, who advocates opening the cecum at the primary operation or arranging gauze packing so as to have a surface of it exposed in the wound for subsequent incision, regards the opening of the small intestine as hazardous, owing to the uncertainty as to the distance of the point opened from the cecum. He has found in his experience that the coils of small intestine below the fistula become united by adhesions into a complex and undecipherable mass, and that if the patients lived, an ileocolostomy was necessary in order to cure the fecal fistula. The writer has not had this experience, although, as will be seen in the report of Case 3, an intestinal resection was necessary for chronic obstruction following enterostomy and closure of the fistula. This operation, however, was necessitated by adhesions above the ileocecal valve, so that it is difficult to see how opening the cecum would have relieved the obstruction in the first place, or how the fact that the ileum was opened had anything to do with their causation.

The advantages, then, of this method of ileostomy over cecostomy are that the intestine is certainly opened above the obstruction in case it is a kink in the cecal region, and the comparative simplicity of the operation for closure of the fistula. The bowel below the opening in the writer's cases never became so empty as to be adherent in a tangled mass, as shown by the fact that contents constantly passed through them, as shown by the abundant bowel movements. It is certainly a fair question whether the same result would not have happened had the cecum been opened instead of the ileum.

For the cecal operation the advantage is claimed that enemata, cathartic and nutritive, may be administered at once through the tube. The same treatment may be administered through a fistula into the small intestine. The primary point, it seems to the writer, is to get the intestine opened above the kinked or paralyzed portion, and enable the over-stretched muscles to get rid of their stagnating contents and recover their tone.

A word as to the technic: Local anesthesia with cocain solution (0.1 per cent.) should always be employed, owing to the danger of inhalation of fecal vomitus. The patient need not necessarily be removed from bed, but it is better to place an operating table in the room beside the bed, and gently lift the patient onto it. After cocainizing the skin and subcutaneous tissue, an incision one inch long is made in the median line below the umbilicus. The aponeurosis is then quickly infiltrated and the abdomen opened. The nearest distended coil of small intestine is sutured to the aponeurosis around the opening by a continuous suture of Pagenstecher thread, opened, and a large catheter of glass tube inserted a short distance into the afferent coil so as to prevent valve formation at the opening. An escape of a moderate amount of gas and perhaps feces takes place at once, and the patient generally expresses relief even for the slight diminution of distention which is at once evident. The operator need not be disappointed that the immediate amount of feces passed is small. A large gauze dressing is applied over the wound, which is kept separate from the other laparotomy dressing by a partition of rubber tissue stuck down to the abdominal wall with a strip of adhesive plaster.

In the course of a few hours, as the over-stretched intestinal muscles regain their tone, there follows a copious discharge from the opening, and generally the relief of tension allows the bowel below the opening to begin to act, so that enemata are successful in obtaining movements from the rectum. The pulse begins to fall within six to eight hours in successful cases.

The operation for closure of the fecal fistula may be done at any time after the patient has recovered his strength so as to be in good condition for it. The technic is simple, and, as employed by the writer and his colleagues, is as follows: The opening is first closed by coarse silk sutures passed through its border in the abdominal wall. Then the opening is circumscribed by an incision through the skin and muscle close to the border, the abdomen opened, and the adhesions freed around the loop of the bowel. This is now drawn out of the abdomen and the margin of the opening with adherent skin, etc., excised till healthy bowel is reached. Then the opening in the bowel is sutured in a direction transverse to its axis (so as not to narrow the lumen) with through-and-through sutures of catgut. This line of suture is infolded by a continuous Cushing right-angled suture of Pagenstecher linen thread. The coil after being thoroughly cleansed with salt solution is then dropped back into the abdomen, and the wound in the abdominal wall closed with through-and-through sutures of silkworm gut around a small gauze drain passed down to the suture line.

In case the obstruction instead of being only temporary has remained permanent, owing to persistence of the adhesions, further operative procedures, even perhaps resection of the intestine, may be necessary for its relief, as in Case 3.

A comparison of the value of the writer's method with primary cecostomy is difficult owing to the rarity of reported cases. He awaits the reports of cases in which that procedure has been adopted in order to estimate its immediate efficacy and favorable after-results, which, according to the verbal report of surgeons connected with the Massachusetts General Hospital, have followed that procedure.

Statistical comparison with secondary cecostomy is also impossible on account of the rarity of reports of cases. In certain cases, cecostomy has resulted in saving the life of a desperately sick patient,[1] and in these cases there can be no doubt that the distention was paralytic, or the obstruction, if present, concerned the sigmoid.

Cases 1 and 3 of this paper, however, may be pointed out as cases which would probably not have been helped by this method.

The writer has the privilege, through the courtesy of Dr. John C. Munro and Dr. George H. Monks, in whose service they occurred, of reporting three cases of enterostomy for intestinal paralysis following operations for appendicitis, and is able also to report one case in which the same operation was done for peritonitis following a stab wound in the intestine. Dr. John T. Bottomley has also, April 24, just performed the operation in a case seen in consultation by Dr. Munro and the writer, in a patient dying from distention forty-eight hours after an operation for acute appendicitis. The patient was temporarily relieved, but died on the sixth day after the operation of septicemia. The report of the case is kindly furnished by Dr. Bottomley.

In addition to these cases reported in full, the writer has done the operation in one other case of peritonitis due to the perforation of the vaginal vault by a splinter of wood; in this case the relief of the distention was not sufficient to enable the patient to overcome the advanced septicemia from which she was suffering, and she died.

He has twice opened the presenting intestine adherent in the bottom of a wound of operation for general peritonitis following appendicitis without avail, the patients being already septicemic.

The operation has also been performed twice by colleagues at the writer's suggestion in cases of distention in advanced peritonitis, in both cases proving unavailing.

The writer does not advocate the procedure with any hope that it will prove uniformly successful, because many patients who may seem suitable for it will be found to be suffering from septicemia so severe that they can not recover strength after relief is afforded to the distended bowel. He does not advocate it either in all cases of general peritonitis which are progressing to a fatal termination after an unavailing laparotomy. But he does feel that there is a class of cases in which the obstruction or paralysis kills the patient rather than the septicemia, and that of these cases a certain number can be saved.

REPORTS OF CASES.

Case 1 may be summarized as follows: *Operation on the fourth day of a subacute attack of appendicitis. Appendix adherent at tip to rectum in median line. Secondary enterostomy under ether for distention and intestinal paralysis 48 hours after the primary operation. Recovery. Operation for closure of fecal fistula after six weeks. Recovery. Good health two years after operation.*

History.—C. P. B., 21 years old, single, a bank clerk, was admitted to the City Hospital as a private patient of Dr. J. C. Munro March 20, 1901. The patient had had a similar attack two weeks ago. Was seized the day before entrance with griping pains in the abdomen, which gradually grew worse. Vomited twice last night. Pain is not continuous, but at times is very severe. Feeling as if of pressing down on rectum. Abdomen distended, everywhere tympanitic. No tenderness or spasm. Temperature 98. Pulse 80.

Operation.—March 23. Ether. Median incision. Appendix three inches long, inside and behind cecum, base adherent to iliac vessels, coiled spirally on itself and with tip bound in adhesions deep in Douglas' pouch Ligated close to base with catgut. Stump cauterized with carbolic acid. Adhesions in pelvis broken up to free adherent loops, and cavity drained with iodoform gauze and glass tube. Appendix showed gangrenous inner coat, nearly perforated one-half inch from tip at site of old stricture.

March 25.—No movement of bowels since operation. Glass tube removed yesterday. Slight discharge. Wicks removed to-day. Cavity well walled off. Abdomen distended and tympanitic. Pulse 140. Ether. Incision in left iliac region. A small quantity of viscid fluid. No adhesions. Marked distention of bowels. A loop of gut brought to wound and roughly sutured to the transversalis fascia, and opened, but only a small amount of gas or fecal fluid escaped on account of the distention. Another loop adjacent was sutured and opened in same way, but evacuations of gas were unsatisfactory. Both loops were apparently small gut, but later it was shown that one was probably sigmoid. The original wound was explored and found clean and walled off. On breaking up adhesions and freeing a loop probably of small gut that was adherent deep in the pelvis and at a sharp angle, there was an immediate gurgle as of pent-up gas. The original wound was drained with iodoform gauze around a glass tube and separate dressings applied to each wound. Patient in very poor condition, almost constant regurgitation, poor rapid pulse, cyanosis, etc.

March 26.—Pulse 120. At 10 p. m. basin full of feces drawn by a catheter through artificial anus.

March 27.—Pulse still lower. Bowels kept flat by passing catheter into artificial anus. Feeding by mouth resumed, as nutrients came out through artificial anus. Progress good. Profuse discharge through artificial anus.

On April 25, four weeks later, the writer closed the artificial anus as follows: Incision was made into the abdomen just clear of the adherent loops which were dissected free from the abdominal wall and separated from each other. The granulating edges of the bowel were excised, the openings in each loop of bowel closed in a direction transverse to the lumen of the gut by three rows of Cushing continuous fine silk sutures, and returned to the abdominal cavity after thorough washing. No shock from operation. Good ether recovery.

The patient made an excellent recovery from this operation, leaving the hospital, May 18, and is now, two and one-half years later, in excellent health.

Case 2.—Summary: *Operation for acute appendicitis 24 hours after beginning of attack. Secondary enterostomy for* intestinal paralysis 48 hours later under local anesthesia. Recovery. Closure of enterostomy four weeks later. Recovery. Good health one and one-half years later.

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[1] Madden: Lancet, London, 1902, 1533 34.

History.—W. B., 23 years old, salesman, was admitted to Dr. Munro's service at the Boston City Hospital on Nov. 21, 1901, 24 hours after the beginning of an attack of acute appendicitis. The abdomen was moderately distended and generally tender, the tenderness and rigidity being most marked in the region of the appendix. Temperature 100.2. Pulse 108.

Operation.—Dr. Munro operated on day of entrance by a muscle-splitting incision in the right iliac region. Abdomen full of serum and sero-purulent fluid, the purulent portion coming from the pelvis. A long, acutely inflamed appendix gangrenous in inner portion and hanging over brim of pelvis, was ligated with catgut and removed. As the general cavity was full of infected serum it was irrigated out with many quarts of salt solution and drained with a glass tube and iodoform gauze.

The following day he passed a little gas, but the pulse remained at 120 and the abdomen began to distend. The drainage wicks were started. The pulse fell to 90. The next day in the morning the bowels moved, but without relief of the distention, which increased during the day, and the patient was given several high enemata of turpentine without result. The pulse rose to 142 and was of poor quality. The patient was nauseated and weak.

The writer, in Dr. Munro's absence, saw him at 9 p. m., and in view of the increasing distention and rising pulse decided to perform enterostomy. Owing to the patient's poor condition and the danger of fecal vomiting under a general anesthetic, local anesthesia with 0.2 per cent. cocain solution was employed. An incision 1¼ inches long was made by the writer in the median line of the abdomen below the umbilicus, and the small intestine beneath was found injected and distended. A loop was sutured to the transversalis fascia by a continuous suture of Pagenstecher thread and opened, allowing escape of considerable gas and resulting in marked decrease of the distention. No shock attended the operation. Separate dressings were applied to the wound.

The following day the pulse fell to 112 and the distention was reduced by the passage of considerable gas through the artificial anus. Feces were soon passed by the rectum, but there was still abundant discharge from the wound until December 18, when Dr. Munro operated for closure of the fistula. The opening being closed by a temporary suture of silk, the incision was carried around the opening on each side through healthy tissue. There were no adhesions of the bowel except around the immediate edge, when it was sutured to the fascia. The loop of gut was brought out and the fistula excised. The opening was then closed by a row of Pagenstecher sutures, re-enforced by a Cushing right-angled continuous suture of pure silk. The wound was closed in layers with catgut and chromic gut.

Convalescence was normal, except for several attacks of vomiting and abdominal pain during the first week. The bowels moved freely and there was no distention. The patient left the hospital in good condition on Jan. 3, 1902. He is now, April 22, 1903, in excellent health.

Case 3.—Summary. Operation for acute appendicitis with distention on fourth day of attack. Secondary enterostomy 48 hours later for intestinal paralysis and distention. Closure of enterostomy three weeks later. Five weeks later resection of intestine for partial obstruction. Recovery. In good health at time of report six months later.

History.—J. W., 11 years old, was admitted to the service of Dr. Monks at the Boston City Hospital on Oct. 28, 1902; four days before sudden pain in abdomen centering around umbilicus. Not radiating nor localized. Vomited frequently since onset of pain. No chills. Small movement resulting from enemata yesterday. General condition fair. Temperature normal. Pulse 100. Abdomen moderately and evenly distended. Coils visible. No peristalsis observed. Moderate general tenderness not at all localized. Moderate rigidity. Peritoneal facies.

Operation.—Ether. Median incision by the writer below umbilicus. Presenting intestine distended and injected. Free fluid, brownish and turbid. Incision enlarged to four inches, and intestine allowed to escape. Appendix found thickened, adherent, extending over pelvic brim into bottom of pelvis, where tip, covered with fibrin, lay in a small abscess cavity. Perforation ½ inch from end. Removal of appendix. At a point on the ileum near the ileocecal valve a large area of the surface of the bowel was covered with fibrin, evidently the seat of an adhesion. Below this point the bowel was not nearly so markedly distended as above. A coil of intestine above the adhesion was brought out over the side of the abdomen, opened and a large amount of feces allowed to escape. Saturated solution of Epsom salts was injected into the bowel and the opening sutured. Abdomen and pelvis flushed with salt solution. Bowel replaced and pelvis drained with glass tube and iodoform gauze wicks. Pulse 160 at close of operation.

October 29.—Occasional vomiting. Temperature normal. Pulse high and poor. Peritoneal facies, mildly delirious. No movement of the bowels or passage of gas.

October 30.—Abdomen considerably and evenly distended. Calomel, ¼ gr., every hour for eight hours without passage of gas. General condition worse.

Under cocain anesthesia an incision 1¼ inches long was made by the writer above the umbilicus. Presenting loop of small intestine, which was reddened and distended, sutured to transversalis fascia with silk. Small amount of gas and liquid feces escaped. Stimulated with strychnia, mildly delirious during operation. Not much relief from distention, probably due to atony.

October 31.—Good movement from turpentine enema. Now no distention.

November 4.—Profuse discharge from enterostomy wound and steady improvement.

November 7.—Attack of nausea and vomiting, with rise of pulse.

November 19.—One or two attacks of epigastric pain, nausea and vomiting.

November 21.—Ether and closure of enterostomy opening by the writer. Operation difficult on account of very extensive and firm adhesions to anterior abdominal wall. Separations of these adhesions difficult and attended by hemorrhage, which was controlled only by infolding the bleeding areas in silk. Opening in intestine carefully separated from abdominal wall and closed with Lembert sutures of pure silk. Further adhesions, very firm and fibrous, were noted to the lower part of incision, but it was not thought safe to separate them.

November 25.—Tendency to epigastric distention and occasional vomiting. Coils of intestine visible in epigastrium. Facies pinched. Occasional spasms of pain. Evidently partial obstruction. Operation discussed.

December 3.—Vomiting continual since last note. Distention continuing in spite of high turpentine enemata. Patient very restless. Facies pinched. Spasms of pain. Occasional passage of gas.

December 4.—Abdomen distended above umbilicus; coils visible.

Further Operation.—Dr. G. H. Monks. Ether. Incision in line of original incision below umbilicus. Abdomen opened freely. Great number of adhesions between intestines and peritoneum and between coils of intestine separated with difficulty, leaving large denuded areas of bowel which oozed freely and which could not be covered with peritoneum. At a number of places the adhesions had contracted the bowel, but not enough to reduce the lumen so as to endanger the fecal current. On following the jejunum toward the iliac fossa a marked contraction, cicatricial in character, was found, complicated by adherent omentum and bowel. The intestine beyond was collapsed; proximal intestine moderately distended. Adhesions were separated. The constricted portion of bowel was excised by removing a wedge-shaped segment 2 inches long on free border and one-half inch long on mesenteric border. Suture with continuous right-angled Cushing suture of fine silk. Patient's condition had become precarious, so that no effort could be made to stop oozing from denuded peritoneal surfaces or to correct other partial constrictions which were found. The abdominal cavity was irrigated with salt solution and the wound hastily closed with interrupted silkworm gut. Small iodoform wick to seat of anastomosis. Rallied slowly from ether and operation.

December 5.—Slight delirium. Still distention. Pulse 140.

December 9.—Pulse 100. Vomiting ceased three days ago. General condition much improved. Distention disappeared. Abdomen soft. Good results from enemata.

December 14.—Rapidly improving. Soft solids by mouth.

December 28.—Gradually gaining. Diarrhea for past three or four days.

January 4.—Improving rapidly, though still much emaciated and pale. Diarrhea still. No distention.

January 9.—Still four or five liquid movements a day. Slowly gaining strength. Up and walking by aid of chair. He left the hospital on this date and reported on April 15, 1903, in excellent condition, having fully recovered his health and strength.

Case 4.—Stab wound of small intestine. Suture of wound and return of intestine followed by properitoneal hernia. Operation for hernia followed by peritonitis with distention and adhesion of a coil of intestine to operation wound. Enterostomy on an apparently dying patient followed by rapid recovery. Closure of fecal fistula six weeks later.

History.—D. M., 62 years of age, was admitted to the Quincy Hospital Feb. 2, 1903, to the service of Dr. N. S. Hunting, through whose courtesy the writer is permitted to report this case. While at a dance at 1:30 a. m. the patient was stabbed in the abdomen. He walked to the office of a physician, who probed and sewed it with catgut. Pain followed and he was admitted to the hospital at 3:30 a. m.

Operation.—He presented a crescentic wound 5/8 in. long one-half inch above and to outside of right spine of pubes. Three stitches were removed. Abdominal wall thin and bowel presenting. Drs. Hunting and Ellsworth operated. Wound enlarged and opened parallel to rectus. It was found that the muscles had been cut upward and outward parallel to and just above inguinal canal. Some free bleeding from cut edge. Punctured wound of ileum 1/8 in. long, from which yellow serum-like fluid exuded on pressure. Closed with two rows of silk suture. Inguinal canal closed with kangaroo tendon after washing out with salt solution. The patient did well for three days, then, on February 11, there was abdominal pain and obstruction which high enemata failed to relieve. Temperature normal. Pulse 60.

Second Operation.—Ether. Dr. Hunting operated. Wound enlarged and opened parallel to rectus. Bowel at site of injury in good condition. Wound tight. On further examination it was found that the peritoneum was deflected from level of anterior superior spine and 19 inches of bowel lay outside the peritoneum, i. e., a peritoneal hernia. Opening in peritoneum was constricting the gut. It would admit tip of finger. Peritoneum opened freely and bowel inside was found injected with flakes of fibrin. The bowel was replaced and cavity washed with salt solution. Peritoneum and wound sutured around a drain of iodoform gauze.

During next three days cathartics and enemata failed to induce movement of bowels.

February 17.—Abdomen distended, skin red, pulled apart.

February 18.—Pain and tenderness in right abdomen.

February 19.—Distention. Wound looks sluggish. Slough and purulent expectoration.

February 21.—Condition same. Distention very marked in spite of repeated small movements from $MgSO_4$. Regurgitates dark green fluid.

February 22.—Uncomfortable. Pulse and temperature good.

February 23 the distention became extreme. The patient was continually vomiting fecal matter and the pulse rose to 140 and became very weak. The writer was called in consultation and found the patient in very poor condition. It was decided to perform enterostomy. With local anesthesia an incision one inch long was made in the median line below the umbilicus. On opening the abdomen it was found full of pus. It was thought desirable to supply drainage for this pus before opening the intestine, and the writer therefore decided to reopen the original wound and insert a glass drainage tube through its lower angle into the pelvis before performing the enterostomy. On dissecting into this wound the intestine was accidentally opened and at once there took place a very free passage of gas and feces, and the patient expressed himself as relieved. The intestine was therefore sutured to the abdominal wall at the place where it had been opened and the other wound was abandoned. A third incision was made in the median line just above the pubes into the abdomen, and through this a drainage tube was passed into the pelvis and the pus washed out of the peritoneal cavity with salt solution. All these procedures were performed without difficulty under local anesthesia. After the operation the patient's pulse and temperature steadily fell. For the first few days feces were discharged through the artificial anus. Later he began to have movements of the bowels. The irritation of the skin of the abdominal wall by the escaping intestinal fluids was a source of considerable annoyance. The patient improved, however, and on April 18 the writer performed the operation for closure of the fecal fistula as described in the three preceding cases. At the time of writing, April 22, the patient was having a most satisfactory convalescence.

Case 5.—*History.*—R. R., 25, single, was recently operated on by Dr. John T. Bottomley, at the Boston City Hospital, on the third day of appendicitis. He found the appendix acutely inflamed, adherent to pelvic brim, free pus in the abdomen and fibrin flakes on the neighboring intestines. There were two perforations near the tip of the appendix. After excision of the appendix the wound was packed and drained freely with iodoform gauze. The abdomen was washed with salt solution. Cultures from the pus showed *Staphylococcus albus and Bacillus coli communis.*

The patient made a good recovery from ether, but for two days after the operation no gas or feces passed the bowels. The pulse gradually rose, and on the morning of the third day the patient began to vomit and vomited dark brown material frequently. The abdomen was distended. The pulse was 140 and he was very weak, cyanotic and evidently desperately ill. He was seen by the writer and Dr. Munro in consultation. Dr. Bottomley performed enterostomy under local cocain anesthesia, making a median incision through the abdominal wall below the umbilicus. On opening the abdomen the intestine was injected, but there was no excess of fluid in the cavity. A loop of intestine which presented under the wound was sutured to the aponeurosis of the rectus muscles by continuous silk sutures and opened. There was an immediate discharge of gas and feces. A bent glass tube was tied in to the intestine attached to a rubber tube which went over the side of the bed. Soon after the operation the patient stopped vomiting and was able to take liquids by the mouth. During the next three days his condition gradually improved. There was copious discharge of feces through the enterostomy wound. The bowels moved by the rectum under the influence of enemata. On the fourth day, however, the abdomen began to distend in spite of the movements of the bowels, and the pulse to rise. On the fifth day the patient began to vomit, and died on the morning of the sixth day.

In this case, it is evident that the operation did not save life, but its effect in relieving the patient was marked. He was moribund at the time when the operation was done, and the improvement which took place seemed almost miraculous. Hopes were entertained of his recovery. There is no question that he died of continued peritoneal infection, which in itself is sufficient to kill many patients even without obstruction of the bowels. No one regretted having made the attempt to save him by enterostomy, for it was felt by all concerned that everything had been done to save the man's life. At a partial autopsy it was found that the opening in the intestine was just 8 inches above the ileocecal valve.

SUMMARY.

Enterostomy is indicated for obstruction or paralytic distention of the intestine from whatever cause, after the ordinary means for relief of such distention have failed. It is especially applicable for distention after operations for acute appendicitis or general peritonitis. Under such circumstances it may restore to life cases in which death seems inevitable. Secondary ileostomy is the operation of choice. Local anesthesia is to be preferred. The subsequent operation for closure of the fecal fistula is usually safe and successful.

DISCUSSION.

DR. M. B. TINKER, Baltimore—Enterostomy has been used in selected cases of this kind at the Johns Hopkins Hospital for the past five or six years. It was introduced there by Dr. Finney, but has been used only in a few cases, for the reasons given by Dr. Lund. It is very repulsive to the patient to have a fecal fistula; the skin is usually excoriated around the fistula, frequently causing severe pain, and it is very difficult to keep the patient clean. In the last three years I have not seen secondary operation necessary for the closure of fecal fistula, however. The intestine should be brought up to the abdominal wall and sutured; a tangential enterostomy which does not bring the gut outside of the abdominal cavity, as in colostomy. Some operators have made a mistake in bringing the gut outside of the abdomen, thus making a secondary operation always necessary. When the fistula persists, as it frequently does, for weeks, excoriation of the skin is a source of great discomfort, and the patients can be greatly relieved by putting them in a tub of warm water. Cases in which enterostomy is of great value are the cases of obstruction following perforation with localized peritonitis. To break up the adhesions and relieve the obstruction would mean the soiling of the entire peritoneal cavity. By the enterostomy we relieve the obstruction at once, and in most cases the obstruction coming from distention gives no further trouble after this is relieved. Leaving an enterostomy opening, instead of closing perforations in the intestines also saves lives in many cases. Dr. Follis did this in a case of typhoid perforation in which the patient was in an extremely low condition, and the very least intervention seemed indicated. This can be done much more quickly than suture of the perforation, and in the case mentioned the patient made an excellent recovery, in spite of his bad condition at the time of operation. In a case of gunshot wound of the abdomen with eleven intestinal perforations, the patient was brought into the hospital in a very low condition with the abdomen full of blood. Extensive intervention meant death, and instead of attempting to suture all the openings, a loop of intestine with four perforations in it was resected, the ends brought out to form enterostomy openings, and was gauze-packed about. Recovery followed in this case also. While not to be advocated in all cases, the use of this procedure in certain critical cases of obstruction from peritonitis has, I believe, saved a number who would have died from a more extensive operation.

DR. MILES F. PORTER, Fort Wayne, Ind.—Some years ago I had the honor of reading a paper before the Mississippi Valley Medical Association, in Detroit, in which this subject was referred to, and a year or two afterward, 1897, I read another paper on the subject of tympany. I tried to show in those papers that there were many cases of peritonitis that died that might and would have recovered had that one symptom been overcome. This statement I had at that time been convinced was correct by at least one case, and since then I have seen it corroborated in a number of cases. I have seen cases of peritonitis with enormous quantities of pus, in which the patient was in such a deplorable condition from the tympany that I felt warranted in relieving the tympany by opening the gut before I drained the abscess, and I have had the satisfaction of seeing at least one of these cases get well.[1]

The point that I wish particularly to emphasize is that many of these patients die because of the tympany, and if that is relieved the patient will get well, or so far recover as to enable one to perform an operation later to remove the original cause of the peritonitis.

Now, in regard to the occurrence of fecal fistula, I wish to emphasize a point made by the last speaker. The fistula will not need to be closed by the surgeon, if it is properly made to start with. If the gut is simply attached to the peritoneum, it will close itself and render a subsequent operation unnecessary.

DR. C. P. THOMAS, Spokane, Wash.—It appears to me that we—particularly the last speaker—are getting the cart before the horse. If we simply attach the bowel to the abdominal wall and make an incision in it, disregarding the pathology, we will get left in a great many cases. I do not believe one case in a hundred of fulminating appendicitis, for instance, where we always have intestinal paralysis, would get well if we simply did an enterostomy.

If we will first remove the cause of the intestinal paralysis, it will not often be necessary to attach the bowel to the abdominal wall and open it. After most intraperitoneal operations there follows some peritonitis, with obstructive symptoms; the time at which we can safely say a given case will recover, or not, without enterostomy, is not to me a definite one, and I believe the cases that recover with enterostomy would have done so without it. The half dozen cases that I have operated on, died, while others apparently as bad recovered without operation. I heard Professor Nicholas Senn once say that his experience had been the same.

We should not expect intestinal drainage to cure peritonitis, but should first remove the cause, leaving enterostomy as a last resort. High rectal injections of alum solution will often hasten normal bowel movement.

DR. JAMES B. BULLITT, Louisville, Ky.—I think we have gotten the cart before the horse, or at least the last speaker has, as I think there was no question raised by the essayists regarding the cure of appendicitis by making an enterostomy. The conception of the author evidently was that the cases of appendicitis should be dealt with in the best possible manner, and when, after the operations have been performed, the condition of the patient demands it, that this operation be done. I believe that all of us, who have not grown very old, perhaps, have been confronted by the most depressing problems. The patient that apparently should be getting well develops a tympany, and the surgeon is always undecided whether or not this tympany will be overcome in the particular case, or whether, if the tympany be unrelieved, the patient will be carried beyond the reach of the surgeon, and death result. Under these circumstances, I say that the younger members of the profession find themselves in the greatest embarrassment, and the older members of the profession, perhaps, are not prone to give them the greatest amount of comfort. Under these circumstances the operation as outlined by the author would seem to me to be the most rational form of procedure. It is one with which good surgeons have been familiar for many years. I am sure that in many cases it is the best and most conservative operation to do, as we can never tell just when these patients have passed the danger line, and if we do not do it, we have to trust to luck that the patient will pass safely by the probabilities of death on the next day.

DR. F. A. DUNSMOOR, Minneapolis—I thought when the essayist was reading his paper that I would have given much at his age to know what he does now, because I am sure we hear of many cases being relieved by this measure. I am sure the essayist doesn't mean to convey to any of the pessimistic men who wish to criticise him, that the operation will cure every person who has intestinal paralysis, obstruction, or who has infection, whether following an operation or a primary condition. It certainly is an important thing to recognize that there is an opportunity of preventing death following postoperative obstruction in this region. When we have made out the fact that our patient has been badly poisoned, either because of the pus previously present, or from operative infection, either obstructive or septic, then we know that something else has taken place within the intestinal tract beside digestion, and we also know that there is a large amount of toxic material there which is going to do harm. It can not get out if there is obstruction or paralysis of the bowel, and we should do as much as possible for relief with as little manipulation as possible, and not hunt all around the abdomen for the perforation. I believe patients have been killed by attempts of surgeons to relieve the condition by suturing the perforation, the local poison being distributed to the general peritoneal cavity with overwhelming results. I open the gut, empty and wash it out. if possible, by means of the normal saline solution. I have not had the opportunity of trying the alum solution, but I am sure that I have seen cases cured, not only by the alum method, but by making a temporary window *in the gut* at the time, and doing a subsequent operation for relief of conditions present.

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[1] Medical News, July 31, 1897.

Dr. Fred B. Lund, Boston—In regard to the fistulas, I would rather close them than wait for Nature, and I think the patients would rather have this done. I do not advocate enterostomy in all cases of peritonitis, nor do I claim it is an unfailing cure. I expressly stated the fact that all other intestinal measures should be employed first, before this operation is undertaken.

PROLONGED INTUBATION TUBES,

WITH A METHOD LEADING TO THEIR EXTRACTION.[*]

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DETROIT.

The field of modern scientific research can demonstrate few more valuable therapeutic triumphs than the results displayed by antitoxin and intubation in laryngeal diphtheria. The fondest hopes of Roux, Berhing and O'Dwyer have been realized. It remains for us, their pupils, only to defend and apply the principles which they have so perfectly laid before us. It would seem that results as marvelous as our collective investigations absolutely demonstrate ought to be sufficient, but there is much missionary work yet to be done. It is not uncommon to find at the present time many cases of laryngeal diphtheria under observation for some days without the administration of antidiphtheritic serum while operative interference is postponed until the patient is moribund.

During a recent trip abroad it was my privilege to meet those enthusiastic pioneers in intubation, Baginsky of Berlin, Egide of Rome, and Massei of Naples, and to find that their troubles with the retained tubes were the same as ours. In view of the brilliant results with intubation and antitoxin in America and on the continent, the incomprehensible antagonism of the followers of Lennox-Brown in England calls forth a most hearty condemnation. The reserve with which intubation is received in Great Britian is almost beyond pardon. A review of the literature of this operation in the *British Medical Journal* for the last decade reveals just seven references to it, six of which are short abstracts from articles published on the continent only, the other one embracing reports of the papers of O'Dwyer and Northrup which were read before the children's section of the British Medical Society.

The masterly thesis of O'Dwyer on retained tubes, and I believe the last important article which he published, is a contribution to our literature that can not be equaled. My work has been along the line of Dr. O'Dwyer's suggestions, and it is with the hope that a report of the results achieved with astringent applications to the larynx in such cases may lead to a wider field of usefulness for these agents that I present this subject for your consideration.

Prolonged intubation, as you know, is a term applied to conditions necessitating the use of an intubation tube for a longer period than six days, while "retained tubes" is an expression usually meant to include the prolonged period with a more extensive or indefinite course of time. Conditions rendering the continued use of the tube necessary are fortunately rare. Some observers report 2 to 3 per cent. of these cases occurring in each 100 operations. Extensive contributions to the literature have been made by O'Dwyer, Bokay, Chetalain, Rauchfuss, Trumpp and E. Rosenthal.

The observations and deductions which I have to make in this paper are gathered from a personal experience of 300 intubations, in addition to the use of antitoxin; 230 of these were reported before the Michigan State Medical Society two years ago. The first 100 intubations gave a mortality of 31, the second 100 showed 20 deaths and the third 100 18 deaths; being a total of 300 intubations (with the use of antitoxin) and 69 deaths. With two exceptions these operations were performed in private practice and for the most part among the ignorant, superstitious, foreign element of our city, whose children are given but little attention in sickness or in health. Two hundred and thirty-one of these intubated children have recovered. Of this number 8 have required "prolonged intubation," and in addition two cases from other operators have been referred to me for treatment.

The pathology and etiology of "retained tubes" include a consideration of traumatism during intubation and extubation, and traumatism while the tube is in position. The presence of pseudo-membrane, edema, superficial erosion, deep ulceration of the mucous membrane, cicatricial contraction, exuberant granulations, collapse of the cartilages, abductor inadequacy and paralyses are the usual causes. In certain cases one may ascribe the compression of the recurrent nerves to tuberculous ganglia, pleural thickening or some unknown neurotic phenomenon.

The admirable autopsy reports of O'Dwyer, Nicol, Bokay, Meslay and Ganghofner have thrown much light on our difficulties. The latter found four with erosion of mucous membrane among 42 intubated cases. Meslay reports a case of ulceration of the trachea and mediastinal abscess. Bleyer shows 1 per cent. of ulcerations in prolonged cases. Carr gives the details of an ulcer one-third of an inch long caused by the string. He also reports instances of ulceration through the anterior tracheal wall and cartilages. In this case a 3-4 tube had been used in a child 2 years and 8 months old. Bokay found 18 superficial and 3 deep ulcerations in 72 autopsies. The tube in one case had been removed at 24 and 48 hour intervals and the string left in. Avendano, on the contrary, performed 10 autopsies where the tube had remained for many days and found in one only a small loss of mucous membrane. The spasmodic ulcerous condition, or what the French term "the tubard," is characterized by numerous rejections of the tube. Bryant reports a case with three auto-extubations in fifteen minutes. Such cases may require special corrugated tubes or morphin in small doses. The short tube of Bayeux is subject to more frequent rejection than that of O'Dwyer on account of the enlargement at the cricoid ring where ulceration of the cartilages occurs in places. In such events the laryngeal nerve endings become exposed, thus rendering the reflex accident of auto-extubation very painful or annoying. The spasm of the intrinsic and extrinsic muscles of the larynx must be allayed by proper treatment applied to the sources of irritation, viz., ulcerations. This class of cases usually present the phenomena of collapse of the larynx attending muscular inadequacy. A tube of correct size must, therefore, be placed in the introductor in preparation for this emergency before extubation is performed.

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[*] Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. H. M. McClanahan, A. C. Cotton and H. E. Tuley.

The diagnosis of the exact condition in the larynx is usually very difficult or impossible. There are a number of clinical evidences which are of great value. however. in differentiating and locating the trouble. Laryngoscopic examination is recognized as the ideal method, but among younger children in private practice it is found to be extremely difficult and unsatisfactory. Dangerous reflex spasm may also result from it. The history of unskilful operating or the use of a tightly-fitting tube is usually sufficient. F. L. Taylor's recommendation to use a tube in number next above the age of the child should receive sharp criticism. His report of 26 recoveries in 36 intubations following this procedure shows 22 tubes remaining in the larynx from five to eighteen days. The frequent obstruction noted in reintubation is due either to edema at the entrance of the larynx or subglottic erosion with attending edema. These conditions can be suspected from the difficulty encountered in introducing the tube. The indications of ulceration may be considered, first, as bloody expectoration following gentle extraction and continued pain over the larynx. Besides eroded black spots may appear on metal tubes, or calcareous deposits with disintegrated tissue from the points of contact with the ulceration. There may be frequent and continuous rejection of the tube, the development of a late hemorrhage or a gradually increasing dyspnea, differing from a spasm of the glottis. The prolonged presence of pseudo-membrane can usually be determined by the exfoliation of small pieces during the second week or by the development of reinfected areas elsewhere.

In the last 100 intubations I have had only one prolonged tube—a case of edema that responded to treatment in ten days and after the third extubation. Every case of intubation requires the most careful prophylactic treatment, and traumatism and pseudo-membrane as causes of prolonged tubes need not exceed 1 per cent. The early administration of sufficient antitoxin is of the greatest importance. Ten to fifteen thousand units without deleterious effects are reported to have been given by some observers, and the tendency to give a larger dosage of from three to five thousand units is very general. A minimum dosage of three thousand units in every laryngeal case, I believe, would prove efficient prophylactic therapy in cases of persistence of the membrane. Three cases of this variety occurred in my early experience. One required the tube nine days, another ten days, the third—a girl of 2 years and 9 months—expectorated laryngeal exudate for twelve days. She wore the tube seventeen days and required twelve intubations. In pre-antitoxin days Huber reports that sixteen days were not infrequent on account of pseudo-membrane. The statements of Quodfleig that not more than three intubations must be done on the same patient are therefore challenged. Experience in this last case showed me the great necessity for a large supply of tubes. My only No. 2 obturator broke at one of these operations, and in attempting to pass a No. 3 tube I nearly lost my patient. I subsequently had a case for instruments so arranged as to hold more than four complete sets of tubes, with all the necessary tracheotomy instruments.

The problem of the prevention of traumatism is more than half solved in the selection of a properly fitting tube. Fifty tubes are a good working number, and two sets of smaller tubes are essential to every operator. The greatest care should be exercised in cleaning the tubes, for if any roughness or other imperfections exist it may cost the life of a patient. Where pathologic conditions are suspected new tubes are found more satisfactory. The metal tube in prolonged cases is dangerous and should be discarded. Three common methods of extraction are presented: the string, expression and the instrumental. As extubation is more difficult than introduction, traumatism is frequently the result of the manipulation. The expression of O'Dwyer tubes is a dangerous practice and should be avoided. In private practice the string should be left in place if possible when there is an extension of membrane below the tube. Numerous modified instruments have been devised to make the operation easy and harmless, such as Dillon Brown's hook method and the electro-magnet of Collette of Antwerp, but the O'Dwyer instruments fill all the requirements when in careful hands. Unskilful use of the extractor and excessive pressure on the epiglottis with the finger may lead to edema of the soft parts or of the subglottic tissue or arytenoids, thus making reintubation necessary. Bleyer reports fifteen permanent lesions of the larynx from this cause.

The great importance of dispensing with the tube as early as possible is certainly recognized, but daily extubation with this object in view is impracticable in private practice. A safe general rule which I have found successful is to extract all tubes on the fourth day. A liberal dose of antitoxin twelve hours or more before intubation renders the success of this routine procedure almost certain.

Perfect quiet after the removal of the tube is of the greatest value. The application of ice cloths over the larynx and the use of the croup tent are not to be resorted to if quiet is to be sacrificed. A child difficult to manage is given a dose of paregoric or codein and phenacetin one hour before operation, which may be repeated if necessary. The child is not allowed to speak or cry, if possible, and with no recurring dypsnea during the subsequent two hours recovery will usually be complete. If reintubation is necessary after the sixth day a definite line of exact procedure and therapy can be outlined according to a diagnosis of the condition attending each case. When on the sixth or seventh day dyspnea suddenly returns and we have evidence of pseudo-membrane or we suspect a reinfection, 1,500 or 2,000 units of additional dosage will check its development, and the prognosis will seem especially good. In conditions of this kind and in paralysis and muscular inadequacy complicating diphtheria, large doses of strychnin are extremely valuable. In many cases efforts to dispense with the tube may be made at two or three day intervals. Rubber tubes may be used, and at reintubation the next smaller size may be inserted in order to change the points of pressure. Having determined as accurately as possible the location of the eroded surfaces, an alum ointment (12 per cent.) may be applied to the surface of the tube and intubation again performed. The string protected by adhesive plaster can be left, to insure the utmost gentleness in extubation.

Although the treatment of these cases is attended continually by annoyances and difficulties that are trying to the surgeon, the results are exceedingly satisfactory. The statement of Goodall of England that frequent expulsion of the tube is an indication for tracheotomy, the observations of Sevestre and Escherick that tracheotomy should be performed if the tube can not be removed within a week, and the opinions of many German and

French operators that tracheotomy must be performed if the tube can not be dispensed with after three intubations, are mentioned to be condemned as unjustifiable and unnecessary procedures. "Tracheotomy is the worst possible thing that can be done," said Dr. O'Dwyer, "for healing of the ulceration is promoted too rapidly after the operation, and a subglottic stenosis results."

Recent literature from Italy and France confirm our own methods. Dr. Tanturri of Naples reports in detail a most interesting case of prolonged tube. Forty intubations and 136 days were required. Alum and ichthyol gelatin with the O'Dwyer tube proved successful. In conclusion, he says that the perforated tube of O'Dwyer is of priceless service in exuberant granulations situated in the region of the cricoid, and that ichthyol is the best medicament. Roe of New York State reports three interesting cases following simple laryngitis with recovery, the longest of nine weeks' duration. Louis Fischer's plan, unknown to me until recently, carries out most efficiently the same suggestion as O'Dwyer's one case. He used 10 per cent. alum or ichthyol-gelatin. The objection to gelatin is the greater difficulty of its preparation, and, like vaselin, it has a low melting point, but mixing with agar any desirable melting point can be obtained.

The method of direct medication to the larynx in cases of prolonged tubes deserves a more extensive use. Argyrol, menthol or resorcin preparations should give good results, and adrenalin applications are recommended for cases of edema. It is thus possible to treat the larynx in all cases requiring reintubation. Of the ten cases of prolonged tubes which occurred under my observation three were caused by persistent pseudo-membrane; two, of ten days' duration, were caused by edema at the entrance of the larynx, and five were necessary on account of subglottic or other laryngeal erosions or ulcerations.

Although some observers report to the contrary, the prognosis in this country would seem very good. The alum treatment was successful and all recovered but one. The fatal case, 2 years of age, died on the seventeenth day after intubation. Autoextubation without the knowledge of the mother occurred while she slept, and when the mother awoke the child was dead. The tube had been out several hours the previous day, the child's strength was good and the case seemed to be progressing favorably. The fact that hospital treatment is absolutely necessary for these cases is recognized, but the parents of the children of our foreign element stubbornly refuse to be separated from their children. Less than a dozen of my 300 intubations, including one case of prolonged tube, have received hospital care or the services of a trained nurse.

The two most interesting and difficult cases I report in detail as follows:

Case 1.—M. B., aged 5 years, had been treated 48 hours for spasmodic croup when Dr. McColl took the case, Jan. 30, 1901. The true condition of diphtheria was recognized immediately and a consultant called. Intubation was performed with considerable difficulty, as the tube was too large. After five days this was extracted again with difficulty. Labored breathing began immediately and reinsertion of the tube was necessary. On February 11 a third extraction was made. The dyspnea gradually returned, and on the 23d the case came under my observation, when intubation was required, and a number three tube coated with alum and vaselin (12 per cent.) was used. A tough ring of cicatricial tissue could be felt at the entrance to the larynx and it was evident that a subglottic stenosis existed. After a series of auto-extubations the parents allowed the child to be removed to the hospital. A No. 2 tube was inserted and the string left in. Three applications of alum and vaselin at three or four day intervals, together with tonic medication and steam sprays succeeded, and on March 13 the tube was permanently removed—a period of forty-two days after the first operation, during thirty of which the wearing of the tube was necessary. The two weeks after extubation was marked by considerable dyspnea coming on each evening, but the croup tent and the use of anti-spasmodics were sufficient to palliate the symptoms. At the present writing (two years later) the child is in perfect health.

Case 2.—Eva B., aged four years, patient of Dr. O. T. Toepel, was intubated June 20, 1899, for stenosis from laryngeal diphtheria. As a No. 4-year tube was too large, the next in size was introduced, and 1,500 units of antitoxin given. Thirty-six hours later the membrane had extended below the tube, and a hurried extubation was necessary. A longer and larger No. 4 tube was then introduced, and the case progressed favorably. Extubation was attempted on the fourth day, but it was necessary to quickly replace it on account of dyspnea promptly returning. Extubations were attempted at two and four day intervals. Three treatments were given the larynx by applying alum ointment along the tube before operation. This method was successful on the twenty-third day, and the child made a perfect recovery.

When these measures fail we have the various modifications of the tube to depend on. The granulation or ulceration tube can be made with a larger (or built up head) and a lower and broader swell. The lines of contour can be changed so as temporarily to remove the pressure from any injured portion of the mucous membrane.

Successful instances of the use of these tubes and retained for some months are reported by O'Dwyer, Northrup and Rosa Engelmann.

In conclusion I would make the following summary:

Cases requiring a tube more than six days should be classified as prolonged.

Rubber tubes only should be used.

Liberal doses of antitoxin are required in cases due to reinfection or persistence of the membrane.

Large doses of strychnin are of value.

Smaller or modified tubes coated with alum ointment or alum gelatin should be introduced at each reintubation.

The string may be left in place with advantage in many cases.

When these measures fail, the "granulation tube" may be used.

Tracheotomy is never indicated.

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DISCUSSION.

Dr. Charles G. Kerley, New York—I have seen only one case of prolonged retention of intubation tubes in my own practice, and two cases in the practices of others. However, my general experience with intubation leads me to indorse everything that has been said in this valuable paper. I do not think that retained tubes are at all necessary. If the rubber tube is used, if it fits, if it is put in and taken out by one who knows how to do it, there should be practically no cases of prolonged retention of the intubation tube. In introducing the tube force must not be used; when it is required it means that the tube is too small, and that laceration will occur. A properly fitting tube will pass in with practically no force. I do not find extraction at all difficult, although I make use of the ordinary extractor of the O'Dwyer set. The finger must, of course, be used as a guide. It is a temptation, I admit, to leave the string, but in older children there is great danger of the child getting hold of the string and pulling out the tube. The only use of the string is in the event of membrane loosening below the tube, making it possible for the tube to suddenly become plugged, thus requiring its immediate removal by the nurse or other attendant.

I think in the future we shall hear much less of these cases of retained tubes, because we have learned how to use antitoxin. I never give a laryngeal case a smaller dose than 3,000 units. The last case I had was one in which I was called late in the attack, and the child had been treated for five days for ordinary croup. Suddenly laryngeal obstruction developed, and I was hurriedly called. I gave the child 1/30 of a grain of strychnin and 1/100 of a grain of digitalin hypodermically before daring to insert the tube. As soon as the tube had been introduced I gave it 3,000 units of antitoxin, and in the course of the next sixteen hours, 6,000 additional units.

The intubation tube was removed on the fourth day, and a re-introduction was not required. The fourth day is the time, in my opinion, to remove the intubation. I fully agree that tracheotomy has no place alongside of intubation. In my own case of retained tube I believe the cause was an abductor paralysis, for I was unable to find any lesion on careful examination; there was only obstruction to inspiration.

Dr. Everett J. Brown, Decatur, Ill.—The first case of intubation which I did was in a patient six miles from town, a boy of 7 years, who had been given up by two other physicians. I inserted the tube, giving complete relief. The tube was left in until the sixth day, and the child recovered without any return of the dyspnea. I noticed in a Vienna clinic that they took out and inserted the tube daily, but I was uncertain whether this was considered desirable for purposes of cleanliness or for purposes of clinical instruction. Recently I was called to do an intubation on a child of 5 years who was nearly comatose. I failed to introduce the tube after three attempts. *On the fourth attempt the tube was coughed up* after a few minutes, and with it a thick membranous cast, which extended down even to the finer ramifications of the bronchi. I had a photograph taken of it, which will soon be published. In this case the obstruction was as much in the bronchi as in the trachea. The child was at once relieved after coughing up this cast, but it died of toxemia, and not of dyspnea, about twelve hours later.

Dr. B. R. Shurly, Detroit—I wish to emphasize the method of applying alum and vaselin to the tubes. So far as I have been able to ascertain, this method is comparatively unknown to those who practice intubation. When there is difficulty in extracting the tubes this method is of the greatest value. It has been used in Italy in one or two cases, and Dr. Louis Fischer has also tried it. This suggestion was thrown out in the last paper written by the lamented Dr. Joseph O'Dwyer. I simply advocate leaving the string in those cases in which the membrane is below the tube, or in those cases in private practice when it is impossible to reach the child quickly in an emergency. I think the frequent intubations and extubations referred to as occurring in Vienna hospitals were entirely unnecessary, and they appeared to me to be done largely for purposes of clinical demonstration.

CONTINUED FEVER—NEITHER MALARIAL NOR TYPHOID.[*]

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It may seem that the subject of continued fever is becoming too common in our meetings to merit any further time or discussion, but, so long as we are met with the *ipse dixit* of some bookmaker, that there are but two types of continued fevers, and that all such fevers must be classed with one or the other, in fact must be either malarial or typhoid, then those of us who do not accept any such dogmatic statements as necessarily true, have a right to give our reasons for our dissent. Our medical brethren in the north, as a rule, contend that every continued fever is either typhoid or malarial, while in the south many of us are sure that we have a third fever, which merits a careful study, the mortality of which is so slight that opportunities for postmortem study have been almost *nil*.

The blood and secretions have been examined microscopically and chemically so far with negative results. A sufficient number of examinations have been made of the blood to show that it does not respond to Widal's test, nor does it show the presence of the *Plasmodium malariæ*. In none of these cases has the estivo-autumnal parasite or the *Bacillus typhosus* been discovered, yet we are told by the bookmakers that the technic was faulty; that the examinations were improperly made. While not prepared and not competent to make any of these examinations, or to apply properly any of the tests in these cases, I have too much confidence in the ability and honesty of the laboratory workers who have made these reports to doubt their correctness. (Just at this point I would offer this suggestion, that no specimen sent to a microscopist or chemist should be accompanied by any clinical history of the case, to avoid the warping of the judgment of the examiner. He should be requested to examine the specimens sent for the evidences of malarial or typhoid fevers, and to report the result of his examination.) We can more often find what we look for than the unknown or unexpected; hence, I say that the clinical history of the case should be withheld.

The teaching of the present day, as pointed out by the learned Dr. Jacobi in an address at Saratoga before one of the Sections of the American Medical Association, in which he spoke with no uncertain sound, does not develop the skilled clinician. The bedside study of diseases has been relegated to the background and the student is impressed with the idea that the microscope will tell him positively all about his case. In many of our diseases the microscope is as yet powerless. One laboratory worker reports and describes a specific germ for a disease, and another soon after reports one entirely different.

In this fever to which I invite your attention the microscope fails to show the *Bacillus typhosus* or the *Plasmodium malariæ*. Reference was made in a former paper to the fact that a number of skilled laboratory workers had investigated the secretions and blood, both microscopically and chemically; by one in more than one hundred cases, and by another in thirty-eight cases, with the same result in each, both asserting positively the absence of anything distinctive of either typhoid or malarial fevers. In numerous other instances the same results have been obtained by others. Yet we are told that Dock of Ann Arbor has proven conclusively that the cases of so-called continued malarial fever in Texas were cases of true typhoid fever, and Dr. Osler asserts that he feels sure that all the continued fevers except those of thermic origin will yet be divided into but two classes, malarial and typhoid, which position is equivalent to asserting that our microscopists who have reported otherwise were not qualified to properly investigate the etiology of these fevers and that our chemists had not skill enough to apply the tests necessary in that part of the laboratory work. His argument is along this line:

> Typhoid fever in Baltimore and Philadelphia, where malaria exists, is not essentially different from the same fever in Montreal where no malaria is found; hence the other continued fevers in the south where malaria exists and where typhoid fever is rarely found must be true malarial fever.

This can not be said to be a first-class argument. A fever that is totally distinct in every respect from the malarial or typhoid fevers except one, viz., duration, can not of necessity be one of the two types. Not many years ago we recognized only two types of the eruptive fevers: measles and scarlet fever; yet recently measles has been divided into rubeola and rötheln, and roseola is certainly distinct from either, and within the last two years an effort is being made to divide scarlatina, as it had been known, into two distinct diseases, each having its own *causa causans*.

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[*] Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

Our boards of health have not yet accepted the doctrine of a disease resembling variola, pseudo-smallpox, having the same relation to variola that rötheln does to rubeola, and the new differential of scarlet fever does to true scarlatina. This effort on the part of those standing high in the councils of medicine to decry anything new not originating with themselves does not tend to encourage individual research. The impetus to medical and surgical investigation along many lines has often been given by the country practitioner or surgeon, as evidenced in the cases of Marion Sims of Alabama and McDowell of Kentucky.

I lay no claims to the discovery of a new fever, but I do take the position that we have here in the south a continued fever that is neither typhoid nor malarial.

In a former paper, I referred to a number of such cases treated by me in the last ten years, and since that paper was written a number of others have been under my care, and very favorable opportunities have been seized on to study these cases at the bedside. The conclusions have not been verified by any autopsies as all of them have recovered. Since July, 1902, I have treated six cases (a total of about one hundred cases), lasting three weeks in the shortest to five in the longest. In each one of these cases the diagnostic points were strongly in evidence. The first case was ushered in by a cold stage, not the chill of malarial fever, but rather the algid stage of la grippe followed by a slight rise of fever, and on the following day at about the same hour more rigors with intense headache and a temperature of 104. The parents, supposing they had an intermittent fever with which to deal, had given calomel, followed by quinin in full doses until the daughter was cinchonized, as evidenced by deafness, etc. When called on the fourth day, I found a normal pulse, profuse perspiration and, while the parents thought her free from fever, a temperature of above 104, no vomiting, no special complaint except headache. Concluding that I had a malarial attack to deal with, I increased the number and size of the doses of quinin sulphate so as to give between 25 and 30 grains before the time for the next paroxysm on the following day, with directions to continue until my return in 48 hours. My next visit showed no effect from the quinin except to increase the deafness and to disorder the stomach and destroy the appetite. I found pulse 78, temperature 104, no tympany, no engorgement of the liver or spleen, no broad flabby tongue, no jaundice, no special complaint about anything except headache. I abandoned the further use of quinin, and prescribed salicylate of soda and carb. guaiacol as follows:

℞. Sod. salicylat.	ʒiii
Guaiacol carb.	ʒi
Milk of magnesia	℥ii

M. et ft. Mist. S. shake well. Teaspoonful every four hours.

A mixture of aconite and gelsemium was prepared to aid in reducing temperature, and for the same purpose frequent sponging with tepid water was directed. On my next visit there had been two cold stages in each 24 hours, but the temperature had not risen above 103. The treatment as outlined above included free and frequent spongings with tepid or cold water, as preferred by the patient, and when the temperature resisted these measures and persisted in remaining up to 103 degrees, 5 grains of acetanilid to reduce, but not to be used if it could be avoided. Only 9 grains of quinin sulph. each day were given until the case fully recovered, which required four weeks from date of going to bed. In this case there were two well-marked rises of temperature in each 24 hours. There was no anorexia, and not a single point of resemblance in the case to typhoid fever.

In one of my other cases the attack was ushered in, or, rather, preceded by an attack of irritation of the alimentary canal, amounting to almost a case of enteritis, caused by the immoderate and excessive drinking of ice-cold lemonade at a Sunday-school picnic. For several days all symptoms were masked by the frequent small, griping, mucous discharges from the bowels, the excessive thirst, tympanitic distension, and an inability to retain anything taken per os. As these symptoms subsided, leaving the whole abdomen tender, the tongue, which had been red and small and long, returned to its normal state, the thirst became less, and the rises in temperature, in spite of all that could be done, were three in 24 hours. Quinin per rectum, after a failure to prevent these exacerbations per os, had no effect on the fever. In this case I was not content to use one form of quinin alone, the sulphate, but resorted to the bi-sulphate, and later to the salicylate. At the end of ten days, no impression having been made on the course of the disease by the antimalarial remedies used, they were abandoned, and the guaiacol-carbonate and soda salicylate of the first case substituted, and under this course the patient was carried through a sickness lasting five weeks, to be followed in two weeks by a relapse from imprudent eating. This lasted two weeks.

The third case lasted four weeks, receiving thorough antimalarial treatment for one week, which was abandoned as useless, and the medicines referred to in Cases 1 and 2 substituted, supplemented later on by a mixture of tr. iodin and Fowler's solution every four hours. The temperature chart showed four rises of temperature in each 24 hours, and later on three, then two, and then one. In this case, from the effect of quinin used during the first week, the digestive organs were weakened so that only malted milk could be retained for a few days, though a desire for food was ever present, and the patient, a female, aged 10 or 12 years, never failed to report herself feeling better, and when her temperature would rise to 103 or 104, the pulse rate was never higher than 90. There was never a dry, harsh skin, never bilious vomiting, never nausea except that which resulted from the use of the quinin the first week. She was always ready to eat, but never thirsty. All the secretions were normal, the bowels generally acting once every 24 hours. At one time she was allowed by her mother to eat sardines, with no unpleasant sequences. At the end of the fourth week the fever ceased, terminating, as shown by the chart, by lysis. In this case there were no profuse sweats as there were in the first and second cases.

Case 4 was a boy, aged 8 years, just on the opposite side of the street from Case 3. It was very mild, showing only two rises of temperature in 24 hours. This patient was saturated to deafness with quinin, which was then laid aside except 6 grains per day, and the guaiacol-carbonate and soda mixture alternated with the iodin and Fowler's solution used throughout the case. On the twenty-first day the fever terminated by lysis. This patient was hungry from the time he was put to bed until he was dismissed. At no time was there any derangement of any of his secretions. With his light diet he became constipated and was given cascara two or three times each week. During the second week he was given four doses of calomel, gr. 1/10.

Case 5 was a repetition in every respect of Case 4. These cases are added to a long list of similar cases already treated by me, with only one death, due to congestion resulting from a disobedience of directions. While a few of the cases have lasted six weeks the rule is recovery in from three to four weeks. We do not expect, except in very young children, recovery before the end of the third week, and my invariable answer to questions of the probable duration of the disease and the prognosis is that they will recover, but not before the expiration of 21 days from the date of going to bed.

In my last case treated (November), the temperature, after dropping the quinin, slowly but steadily decreased each day, until on the eleventh day from going to bed it dropped to normal and did not rise above 100. This case appeared to be a duplicate of Case 5. But the slight rises of temperature alone and the little difference between the daily maximum and minimum point is no indication of the duration of the attack, several of such cases having lasted from four to six weeks, and in one case especially referred to in one of my former papers on this fever, after continuing for three weeks with a maximum temperature of 101 to 102, during the fourth and fifth weeks there were daily ranges from normal to 104 and over. These cases are the ones we expect to terminate by crisis with profuse sweats.

The cases of this season have demonstrated the fact most conclusively that quinin will not cure this type of fever. I have used it in varying doses per os and per rectum. In none of these cases was the use of it discontinued until decided deafness was produced, no attention being paid to any of the other symptoms of cinchonism. I have not used any of the quinin salts in from 20 to 40 gr. doses, never do, but have repeated in from 3 to 10 gr. doses until the effect was self-evident, and then have maintained this effect for from three days to a week and in some cases to ten days.

Reference has already been made to the use of microscope and chemical investigations in these cases, hence I will devote no further time to this branch of the subject, not being able to speak *ex cathedra* myself in the matter. I desire, however, to emphasize the point of difference from a clinical standpoint, and permit me to add that where the bedside study of a case teaches plainly one thing and the work of the laboratory another, I, for one, would strongly incline to the teachings of the sick chamber. It has been demonstrated time and again that the laboratory worker has agreed with the clinician in this fever, and yet the question of competency has been raised; while no question is raised in the case of other workers in the laboratory when they have discovered, or thought they have found the micro-organism for which they were looking. These cases have not, then, been ushered in, as a rule, abruptly by a chill, but have had usually for a few days or a week prodromes of malaise, then rigors, sometimes a slight chill, followed by a slight rise in temperature, which does not generally attain its maximum for from three days to a week. While this fever presents marked remissions, for the first week the remissions are not so decided in the second week, but are more so in the last week, amounting to intermissions with profuse sweatings. The chills, or cold stages, are accompanied by aching of sometimes one set of muscles and sometimes in all, resembling in that respect la grippe. After a day or two all pain ceases, and the patient complains of nothing. The remissions in this type of fever vary from one to four in 24 hours, and may be made more marked by sponging with tepid water in all cases by aconite and gelsemium in a few and by the coal-tar derivations in almost all of them. As a rule, sponging produces a condition of euphony and the patient never objects to its use.

There is no nausea and vomiting; never bilious vomiting, no jaundice, no clay-colored stools, no diarrhea, and, if any departure from the normal in this respect, constipation; no tympanites, unless it be due to some imprudence in eating; no tenderness over the abdomen; no rose-colored spots; no marked enlargement of the spleen or liver, unless there has been a history of malaria preceding; no anorexia, but, on the contrary, in many cases a desire for food all through the sickness; no broad, dry, flabby tongue, with its yellow pasty coating, but, as a rule, a tongue nearly normal in every respect, and when coated it is thin, of a light color. We have, in none of these cases, the pointed, narrow, dry, fissured tongue, with its red edges and dry, coated, and frequently cracked center. The tongue never bleeds, in fact the rule is all typhoid and malarial appearances are absent from the buccal cavities and the rest of the alimentary canal. The digestion is rarely impaired for food suitable for the sick, though I have noted abdominal distension when solid foods have been administered or allowed. There is no mental hebetude; in fact, generally the brain is not affected at all and ordinary business matters could be attended to by many of these patients with their usual business acumen. We never have any low muttering delirium as in typhoid fever, nor the active symptoms of malarial fever. The facies of the patient is normal, though he may be thin from loss of flesh attendant on the long drawn out fever. The muscular strength is not impaired as in typhoid fever, but its loss is in proportion to the length of the attack and heighth of temperature. In one patient sick six weeks, with a temperature reaching 105 daily for nearly two weeks, the loss of weight was slight, but the muscular tone was much impaired but was rapidly regained.

That these cases are probably toxenteric, as claimed by Dr. J. A. Witherspoon of Nashville, is evidenced by the fact that when relapses have occurred, in my practice they could be traced to imprudent eating. In no case of the many treated have I ever seen any tendency to epistaxis, though in some persons who were predisposed to tamper with their nasal organs, a few traces of blood have been noted in the secretions blown from the nose. The kidneys have acted, as a rule, normally, the quantity of urine being diminished where the skin has acted too freely. We have no dry harsh skin in this fever as in typhoid fever, nor is sweating any evidence as in malarial fever of a decrease in temperature, the skin in this fever being frequently bathed in perspiration when the temperature is at its maximum.

One of the most marked peculiarities of this fever is the disproportion between the pulse rate and the temperature. The ratio is frequently inverse, the pulse beating at from normal to 90, with a temperature of 103 to 105 or even higher, and the same may be said to be true in regard to the temperature of any exposed portion of the surface of the body. The hand applied to the pulse and then to the forehead would lead anyone not using a thermometer to say that there was a perfect freedom from fever. This condition of things has been reported to me time and again, and yet when the thermometer was used in the mouth or axilla a high temperature was clearly shown. The hand applied over the bowels or to the back under the clothes and cover frequently shows fever. In these cases, no proper nursing can be done without the use of the thermometer every two hours, and a record is required to be kept in every case, with, however, a verbal direction not to disturb the patient when soundly sleeping. I might refer to the fact that it has been my experience that the nearer a direct proportion between pulse and temperature, the more confidently is a termination by lysis to be expected at the expiration of 21 days, and vice versa. In those cases of indirect ratios the termination is more likely to be by crisis and profuse sweating. In this class of cases, when the fever begins to intermit, strychnin is demanded. I might consume time indefinitely on the subject, but my time is up.

TREATMENT.

As to treatment, a few words. As soon as satisfied that the cases are not malarial, which should be determined in four days, quinin should be abandoned or used as a tonic in 3 gr. doses. I have obtained my best results by alternating the following prescriptions for an adult:

℞. *Guaiacol carb.* ....ʒii
Sod. salicyl. ....ʒvi
Bismuth. lact. ....℥iv
M. Sig : Take one teaspoonful every four hours.

℞. Tr iodin. .. ..ʒss
Liq. potas. arsenit. ....ʒi
Aquæ .. ..℥iv
M. Sig.: Shake. Teaspoonful every four hours. Alternate with the first mixture.

All symptoms are met as they arise, but unless some idiosyncrasy is manifested by the patient and the temperature runs high, these two prescriptions are kept up regularly night and day, but where the grade of fever is low they are usually omitted at bed time, say 10 p. m. I have used many intestinal antiseptics in treating this fever, but have had the best results this year from the above course.

The temperature is reduced by the free use of tepid or cold water, allowing the patient to choose.

The diet is liquid or semisolid, buttermilk being preferred to anything else when the patient can use it.

SOUTHERN FEVERS.*

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In assigning this subject to me, our secretary said he wanted to show that some missionary work on the subject of fevers in the Mississippi Valley was being done, despite the controversies one sees about slow, continued, typho-malarial, and other fevers. With this idea of the scope of the paper, fevers of sepsis, tuberculosis, rheumatism, syphilis, etc., have not been given a place.

The cases presented are to be looked on as types of a number of cases seen by the author, and are believed to serve the purpose better than an elaborate discussion for which we have no time. None of the histories are complete, but enough is offered to make the point intended.

I, ACUTE ESTIVAL FEVERS; 2, CASES WITH AUTOPSIES.

CASE 1.—W. B., male, white, aged 54, was brought to St. Joseph's Hospital in July, 1900, in an unconscious condition. From others it was learned that he was a passenger on a train coming to Memphis, and was suddenly taken with what was described as "congestion"—a term very much in vogue to denominate sudden fevers usually terminating in death. His temperature on admission two hours later was 108 F. The notes of the attending physician state that ice baths, subcutaneous injections of antipyrin and quinin had failed to bring about a change, and he died in six hours without ever regaining consciousness.

A blood examination had not been ordered, but the antemortem diagnosis read "pernicious malarial fever." The following from the necropsy report is of interest:

Autopsy five hours after death; rigor mortis; body of a very plethoric man; capillary stasis; ecchymosis; incision over calvarium bleeds freely; excessive hyperemia of encephalon; blood smears taken. Abdominal viscera pale, no marked changes; pleuræ free, lungs hyperemic; heart very firm, right ventricle full of dark fluid blood; smears from this also; no plasmodia in either. Postmortem diagnosis, sunstroke.

CASE 2.—Colored man, aged about 45; arrived at city hospital comatose in August, 1900. Attendant's notes showed rectal temperature of 107 F. on admission; plasmodia in blood. Was packed in ice, quinin and saline infusion subcutaneously; slight reaction; death next morning.

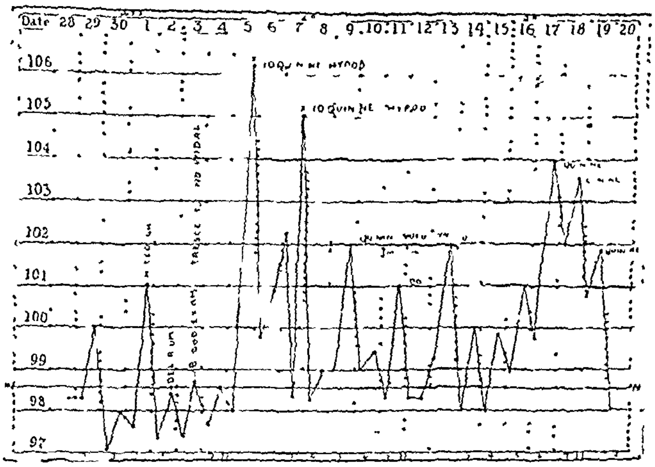

Chart 1. case 3

Autopsy: Marked hyperemia of all the organs; heart contains thrombi which are nearly white.

The tissues and blood were taken to author for microscopic examination.

Smears from lungs and brain contained estivo-autumnal parasites, no crescents; splenic blood not fit for examination. Microscopic sections showed marked pigmentation in liver, spleen, kidneys and lungs. Pigment is siderin, not melanin. Very marked fibrous endarteritis, especially of the coronaries, doubtless syphilitic. Tissues had been in formalin very long and efforts to stain parasites in the sections proved unsatisfactory.

These two cases are reported as different comatose fevers with very similar symptoms. If the attendant of the first case had made a blood examination he would not have fallen into the error of giving quinin to a patient with sunstroke—it was a serious mistake.

II. CONTINUED ESTIVAL FEVERS WITH DIARRHEA, 2 CASES, WITH ONE AUTOPSY.

CASE 3.—J. M., aged 26. Admitted to St. Joseph's Hospital Sept. 28, 1899. Had been sick at Little Rock, Ark., with dysentery for a week; had had vomiting and daily chills. On admission showed abdominal tenderness, slight tympany, gurgling in right iliac fossa; spleen enlarged and tender; tongue dry, red and hard, with fissures; low delirium at times. The accompanying temperature chart completes the history, but the record for the first five days is not correct, as it was found afterward that he had nocturnal chills and exhibited much prostration in the mornings. A physician in consultation insisted on its being typhoid. The blood analysis appears on the fever chart; he had the malarial leucocyte count, estivo-autumnal parasites, crescents, no Widal reaction. The treatment was antimalarial, salines for the dysentery. He was discharged cured at the end of four weeks. His paroxysms being nocturnal, they had been overlooked and the accompanying dysentery helped to produce the typhoid symptoms. Heroic quininization changed the picture.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs J. M. Anders, Frank A. Jones and W. S. Thayer.

The temperature chart and blood examination saved this case from being classed as typhoid fever, and death would have been the result.

Case 4.—(Record taken from the Reports of the Marine Hospital at Memphis.) The writer saw the patient several times and assisted at the autopsy:

J. F., colored; native of Louisiana; admitted to the United States Marine Hospital at Memphis Dec. 26, 1896, and died Jan. 3, 1897.

History.—Patient was a well-developed and healthy-looking colored boy. He had been sick for four days with chills and fever. Initial chill came on in the evening and was very severe; had a similar chill every evening up to day of admission. His bowels were very loose from the first. Discharge watery and preceded by pains in the abdomen. Temperature on admission was 40.5 C. Pulse poor; tongue round and flabby, clean and red on edges and moderately furred in center. Neither liver nor spleen noticeably enlarged. Was given tincture digitalis on admission and was ordered quinæ every four hours with bismuth and mixture for diarrhea. His temperature on the morning of the 27th was 39 C. and pulse 90; bowels loose but less so than on preceding day. His blood showed a large number of very small extra-corpuscular "rosettes" and some granular bodies. The segmentation in rosettes was not as distinct as usual. On admission the diagnosis of intermittent malarial fever was made to conform to official nomenclature, but the blood examination showed at once that the disease was estivo-autumnal, or, as the nomenclature has it, remittent fever. The possibility of a mixed infection was considered but abandoned. There was an entire absence of tympanites, gurgling and iliac tenderness. The stools were more watery and paler than typhoid stools, but still quite suggestive of typhoid. While the malarial nature of the case was clearly established, still the fever was a hard one to classify as to the kind of malarial fever present. The history from onset to admission pointed to a double tertian or to the variety of estivo-autumnal fever marked by quotidian paroxysms.

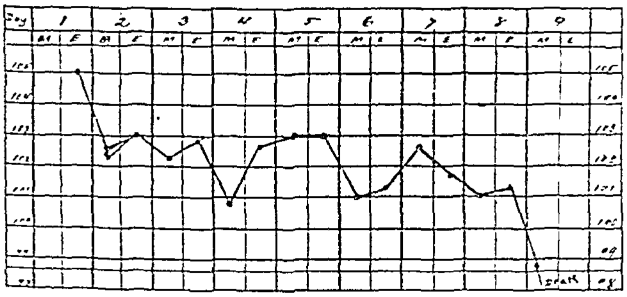

Chart 2, Case 4.—J. F., U. S. M. H., Memphis. Temperature transposed to F. scale. Remittent fever, with diarrhea, perforation and death. Prodromes: Chills daily, 4 days; one on admission; parasites in blood.

The appearance of the rosettes and the temperature curve for the first four days indicated the quartan type of estivo-autumnal fever, while the subsequent temperature curve showed regular tertian remissions. His diarrhea yielded slowly to treatment, declining by the 31st to two passages a day. On the 30th his blood showed both intra- and extra-corpuscular, small hyaline bodies, and a few large and actively motile pigment grains or blocks—two or three to each body. The next day only a few extra-corpuscular pigmented bodies could be found. His mental state from about the third day became rather foggy—a fairly typical typhoid state in fact.

On the 1st of January, the sixth day from admission and the tenth since onset of disease, he had several severe attacks of colic, and these recurred on the 2d. On the night of the 2d his pulse failed rapidly, tympanites developed, and it became evident that he had sustained an intestinal perforation. He died at 10 o'clock on the morning of the 3d, just twelve days from date of first attack.

Necropsy, twenty-four hours after death. Body fairly well nourished. No scars. Calvarium not opened. Lungs normal except for slight congestion. Pericardium contains about 200 c.c. of fluid. Heart rather small, but otherwise normal. Liver, spleen and kidneys normal in appearance and size. Intestines showed general fibrinous adhesions. About 250 c.c. of fluid present in abdomen. The ileum presented a large number of follicular ulcerations. These ulcerations were all opposite to the attachment of the mesentery. Peyer's patches were not at all involved. The mesenteric glands were not enlarged. Two perforations were present—one 4 cm. from the ileocecal valve and the other 12 cm. There were several ulcers, in which the coats were eroded down to the peritoneum. At about 20 cm. above the ileocecal valve there was an area about 2 by 4 cm. where the entire mucous membrane was eroded. Sections taken through the ulcers showed a typical follicular ulcerative process and an entire absence of any of the microscopic appearances of characteristic typhoidal ulcers.

The ulcers were small, funnel-shaped, less than 1 mm. in diameter, with elevated edges; the perforations were about 2 mm. in diameter and closed by fibrinous exudate. Dr. Young and I discussed the Widal test, but this was in its infancy; neither of us had any cultures of typhoid on hand, and Johnston's dried blood method was as yet unknown; typhoid fever is, of course, not scientifically excluded. We both wanted to believe it was typhoid fever; it was between Christmas and New Year, but the blood and postmortem evidences were against such a diagnosis, and it was reported as a case of remittent fever.

III. CONTINUED FEVERS WITH CONSTIPATION, 2 CASES.

During my term of service in the summer of 1899 at St. Joseph's Hospital I had 248 cases of fever, and of this whole number there were only 3 in which there was a question of diagnosis; one of these is reported above. During 1902 I was interested in 2 cases, which follow:

Case 5.—O. G., aged 19, male, drug clerk; had had intermittent fever a year ago; malaise this time for several days, followed by catarrhal bronchitis. Seen first by Dr. Baldwin (to whom I am indebted for this history) on Oct. 26, 1902. Provisional diagnosis, la grippe; salines and salicylates administered; remission on second day, rise on third; cinchonized for three days. Temperature during first week, morning 100 to 101.5 F., evening 101 to 102, pulse 80 to 85. Dried blood spreads brought to me November 2 showed intracorpuscular estivo-autumnal parasites, about half grown, no crescents; infected cells generally crenated and small. Leucocyte count of 300 cells: small lymphocytes, 9.3 per cent.; large lymphocytes, 30.3 per cent; polymorphonuclear, 58 per cent.; eosinophiles, 1.3 per cent.; basophiles, 1 per cent.; a few microcytes and small nucleated forms, phantom cells and polychromatophiles. No Widal reaction in any dilution. He was thoroughly quininized again without visible change, and after another week malarial infection was still present; no Widal; small lymphocytes, 20; large lymphocytes, 14; polymorphonuclears, 64; eosinophiles and basophiles, each 1 per cent.

Pulse still 85 and good volume, now slightly dicrotic. Temperature runs from 100 to 103 without change in pulse. This time he was given 90 grains quinin hydrobromate in 24 hours; it seemed to have the effect of running up the fever, for he had 102 in the morning and 104 in the afternoon following, and for four hours there was intestinal hemorrhage, at first slightly clotted, then fluid and carmine red; there were no piles. Cold sponging was followed by a fall in fever and profuse diaphoresis. The fever now gradually declined, reaching normal on the 32d day of the disease.

There was marked tendency to constipation throughout, combated by salines, and when these were suspended some tympanites would develop. Nose bleed once in the first week; a few petechiæ present once, but rather persistent; subsultus once, early; mental hebetude at times. Entire course mild and marked by very slow pulse. Widal reaction constantly absent.

Case 6.—This patient took to his bed June 14, 1902, and was removed to a private room at St. Joseph's Hospital on the 16th. The previous history was that of malaise for a week, with gradually rising fever. The attending physician found estivo-autumnal organisms and pigmented leucocytes, and gave several intragluteal injections of quinin bimuriate with urea, 0.5 gram each in 10 c.c. of water at six-hour intervals. There was albuminuria with casts and gradually aggravating oliguria during the first week. Renal and frontal pains were constant and troublesome symptoms. There was obstinate constipation and intestinal paresis throughout. The patient could not bear cold to the surface, even icebags produced local neuralgia, and the temperature was reduced with thermol when it got near 104; for this reason the fever chart has no value.

At the end of the first week in bed, no blood evidences of malaria being present and fever still persisting, several trials with the Widal test were made, but without result. The diagnosis of paratyphoid was suggested by one consultant, but no cultures were obtainable. The fever definitely subsided at the end of three weeks without further resort to quinin.

This patient was seen by three very competent practitioners with all the resources of modern medicine at their command, yet one positively asserts that it was a case of malarial fever and proves it by his slides; the second is equally as certain that it was typhoid fever, despite the failure of the Widal test, and the third, who is our honored secretary, modestly suggested that it was paratyphoid. The writer's own opinion is not worth much, since he was the patient. A very complete history was taken, but it throws no light on the case.

During the summer of 1900, 26 cases with history of acute malarial fever were admitted to my service at St. Joseph's Hospital, none of which received any antiperiodic treatment after admission. The blood was examined in 11 without showing infection. They were held to await further recrudescence of the paroxysms, but the fever gradually subsided. They were booked as postmalarial malaise. Here is the history of one:

Case 7.—L. F., female, aged 24, white, married. Lived in St. Francis bottom; admitted June 10, 1900, with history of tertian chills. Temperature on afternoon of day of admission 102 F., pulse 110 and small. Liver and spleen enlarged. Blood analysis next morning: reds, 3,640,100; hemoglobin, 70 per cent., indicating reduced color index; whites, 6,470, differential count of 200 (eosin and methylene blue). Small mononuclears 10.5 per cent.; large mononuclears and basophiles, 28.5 per cent.; neutrophiles, 54 per cent.; eosinophiles, 8 per cent. No malarial organisms; some leucocytes pigmented.

Blood count five days later showed 3,981,000 reds; hemoglobin, 80 per cent.; whites, 10,180, 70 per cent. of which were neutrophiles; eosinophiles and small lymphocytes gaining. Discharged on June 20 feeling quite well.

The following is a case of typhoid fever with irregular temperature curve:

Case 8.—W. J. R., aged 21, male, white, clerk. After a two-day malaise he went to bed on July 20, 1901, with a chill, followed by high fever and going off in a sweat. The first temperature reading, taken at this stage, was 104 F. Blood examinations on fever chart; malarial count, leucocytosis, no plasmodia. Next day he had another chill, followed by rise of temperature to 105.2; no plasmodia; no local symptoms to account for chills, pus suspected; bowels constipated and paretic; enema and salines given. Fever then assumed a remittent type and leucocytes diminished; relative increase in small lymphocytes. Widal reaction positive on first and only trial, on sixth day. The case now ran typically typhoid until in the third week there was another chill with leucocytosis; no plasmodia; no quinin given. From now on fever gradually subsided and he made an uneventful recovery. A year later he developed a suppurative appendicitis and was successfully operated on. I am now quite sure that this is what complicated his typhoid fever. I should add that no adhesions were found at the operation. The accompanying temperature chart completes the history.

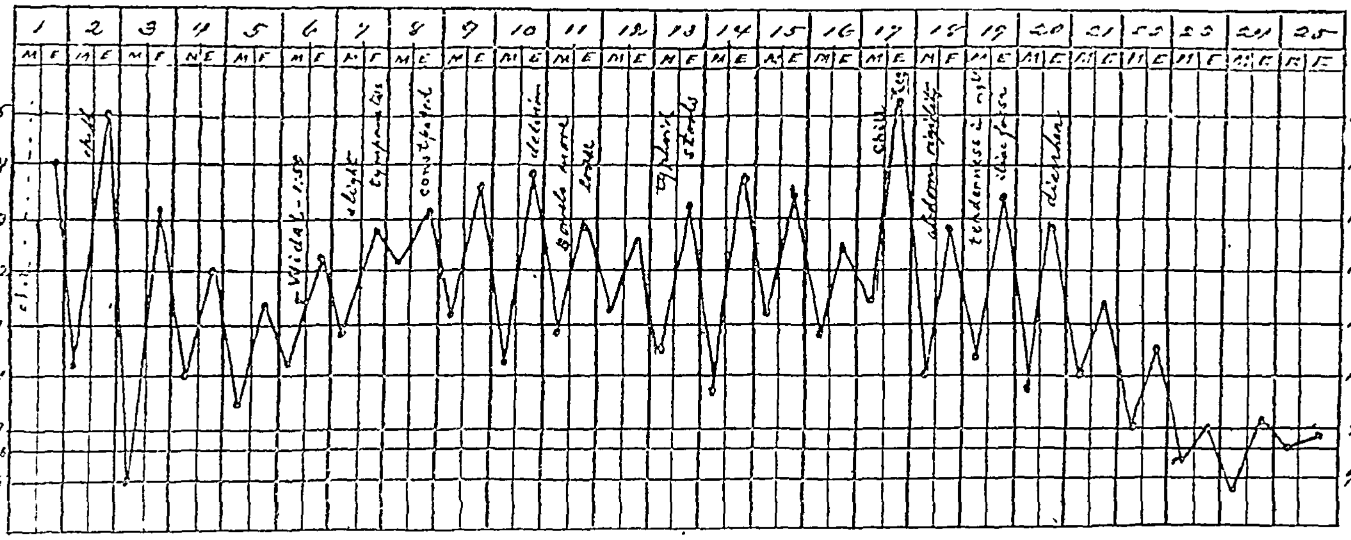

Chart 3, Case 8.—W. J. R. Typhoid fever, with chills. Blood, first day: No plasmodia; no pigmented leukocytes; white cells, 12,020. stained eosin and m. blue; small lymphos., 22, or 11 per cent.; large lymphos. and basophiles, 46, or 23 per cent.; polys., 130, or 65 per cent.; eosinophiles, 2, or 1 per cent. Sixth day: No plasmodia; Widal in 1:50=30 min.; small lymphos., 18 per cent.; large lymphos. 15 per cent.: polys., 67 per cent.; eosinophiles, 0 per cent.; total leukocytes, 9,340. Seventeenth day: No plasmodia; white cells, 16,310; 77 per cent. polys. This case presents a leukocyte proportion resembling that of malaria, except as to polymorphonuclear cells.

Without a blood examination this would have been regarded as a case of malarial fever with intercurrent typhoid.

Now, in conclusion, a few words as to our methods of diagnosis. The Widal reaction is open to fallacies. Even if the culture is just right and the drop contains no fibrin, we have errors estimated at from 3 to 12 per cent. either way. Frequently a single test is all that can be made and the reaction, if transient, may escape us. We also know that it may persist from a former attack and which was perhaps not recognized.

On the other hand, to what do we refer the Widal test as standard? When can we say that it has failed? The blood culture test only appears in about 70 per cent. or less of apparent typhoids. If we have a patient with no symptom but fever, but whose blood gives a Widal reaction, we say he has typhoid fever, yet we have such cases that do not react to typhoid culture and are undoubtedly cases of thermic fever. Yet when we have a case with typhoid symptoms and no Widal we say that the test has failed. In the first instance we reject the negative clinical evidence and in the second we reject the negative laboratory evidence; we do not question the reliability of the Widal test in the one, but we do in the other.

As regards malarial infection, we are by no means a unit as to the diagnostic value of a few infected red corpuscles. We certainly do have latent "malaria," though, perhaps, never without symptoms, and any intercurrent disease may drive the parasites into the peripheral circulation; we attribute the fever to the parasites and cinchonize, sometimes with effect on the fever, sometimes without. The result is conflicting opinion as to the value of quinin in malarial fevers. The so-called malarial leucocyte count is not always characteristic; I have found it repeatedly in fevers giving the Widal reaction when there were no plasmodia. If we make a spread by drawing one slide lengthwise of another and count only within the leucocyte fringe we find relatively less small lymphocytes, because these are left behind with the red cells.

SUMMARY.

We might summarize our paper, then, as follows:

1. A very sudden hyperpyrexia in midsummer is more apt to be sunstroke than "congestion." Do not give quinin without cause.
2. The malarial leucocyte count is only collateral evidence of malarial infection, and the count must include all the cells in the spread.
3. The Widal test may lead us into error in a small percentage of cases; the blood culture test is more difficult and has no negative value.
4. A chill or fulminant onset of a typhoid fever is not sufficient evidence of a complicating malaria.
5. A chill or sudden disturbance of the temperature curve during convalescence in typhoid fever is not necessarily malarial.
6. In a malarial infection the persistence of an irregular subcontinuous fever after thorough cinchonization is not evidence of a typhoid complication or of remaining plasmodia.
7. A positive diagnosis of summer-fall fevers is not always possible.
8. In the hygienic management of summer-fall fevers we should presuppose a double infection, irrespective of symptoms.
9. Some of the summer-fall fevers are typhoid, some are malarial and a few of them are neither one, but the writer is opposed to the belief in an X fever.

The Great Charite Hospital at Berlin.—Besides the 147 physicians connected with this hospital there are 603 other officials or attendants. There are 1493 beds and 68 infant cribs. The number of patients treated last year was 19,121; the average stay in the hospitals 28.8 days; the expense per day and capita 3.36 marks or about $0.84. The house staff numbers 519. The *Allg. Med. Ct. Ztg.* for April 26 gives other details of the establishment which consumed last year nearly half a million eggs, 44,478 liters milk, 30,602 herrings and 36,856 kilograms butter, etc.

A CLINICAL OBSERVATION OF NINETY CASES OF TYPHOID FEVER.

WITH FOUR DEATHS, WITH SPECIAL REFERENCE TO THERAPEUTIC FASTING.*

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While a statistical study of typhoid fever is not in strict accordance with the caption of this article, there is a valuable amount of information as to the etiology of the disease furnished by the vital statistics of the Twelfth Census Reports and, for a practical observation, a few facts may be referred to without impropriety.

The geographical distribution of typhoid fever shows a greater prevalence in the southern states, including the Carolinas, Georgia, Alabama, Mississippi and Tennessee, the death rate being 76.1 per 1,000 deaths. Next highest mortality is 69.5 for Louisiana, Missouri, Arkansas, Indian Territory and Texas. Of the latter 80.6 is rural and 38.7 is cities. The general rate for rural is 48 and cities 19, which suggests a greater source of infection in the rural districts. Nearly every source of the infection can be excluded except the drinking water, which is contaminated by the soil. My own observation of the cases herein reported warrants that belief, as 79 cases drank well water and 11 cases drank hydrant water, and the greater proportion of the population in the locality where this observation was made is dependent on hydrant water for drinking purposes.

TABLE 1.

	Population.	Deaths, All Causes.	Typhoid Deaths.	Tuberculosis Deaths.	Typhoid Deaths per 1000 Deaths.	Tuberculosis per 1000 Deaths.	Typhoid Deaths per 100,000 Pop	Tuberculosis per 100,000 Pop.	Death Rate.
United States..	75,994,575	1,039,094	35,379	109 750	34	106	33	190	
White	66.809,188	892,092	28,848	87,673	32	98	43	131	13
Colored.. . . .	9,185,387	147,002	6,531	22,077	44	150	71	251	16
Georgia.... .	2,226.331	26,941	1,585	2,651	58	99	71	120	12.4
White.. . .	1.181,294	13,094	942	981	71	74	79	83	11
Colored.... .	1,035,037	13.847	643	1,671	46	126	62	161	13
Atlanta..... .	89,872	2,387	98	309	40	125	108	342	26 6
White.. . . .	54.090	1,250	53	119	42	95	97	220	23
Colored.... .	35 782	1,137	45	181	39	159	125	505	31
New York State	7,268.894	130,268	1,776	14,306	13	109	24	196	
New York City.	3,437,202	70,229	594	8,482	8	120	17	216	. .
Massachusetts.	2,805,346	49,756	625	5,370	12	107	22	120	. .

It will be observed in Table 1 that the general death rate per 1,000 deaths from typhoid fever is 34. In Georgia the rate is 58, while New York has 13 and Massachusetts has a rate of 12. Atlanta, Ga., has a rate of 40, while New York City has 8.

As will be observed, the death rate in Georgia is less for the colored race, being 46, while that of the white is 71. The disease is evidently less frequent and less fatal in the colored race. This disease, excepting tuberculosis and pneumonia, claims more victims than any other disease in the south and, excluding the infant mortality of pneumonia, it is second in causing more deaths in adult life. According to death rates given by the census report in the rural districts of Georgia, there were 1,325 deaths from typhoid fever, while tuberculosis claimed 1,668.

A greater number of deaths from typhoid fever occur in the months of August, September and October and there is a more frequent occurrence after a season of heavy rainfall. It is pre-eminently a disease of early adult life, and the average age at death of all cases in the United States is 28.8 years. Typhoid fever shows a marked predilection for occupations. As will be observed in Table 2, farmers have the highest death rate, 58 per 1,000 deaths, excepting teachers, which is 98. Nurses have a rate of 56, miners 43, clergymen 37, and physicians and lawyers 23. It will be observed that physicians, although in contact with the disease, do not often become infected and nurses are not more often infected than other classes. There are more people ill with typhoid fever during the year than any other disease, especially farmers. Estimating the mortality of typhoid at 15 per cent., tuberculosis 75 per cent. and pneumonia 20 per cent., there were farmers ill from typhoid fever 37,710, from tuberculosis 14,735, and from pneumonia 55,003. The same observation is noted for other occupations.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

The death rate per 100,000 population for various occupations is as follows: Farmers, 32; miners, 38; physicians, 33; clergymen, 46; lawyers, 31, and nurses, 47.

These facts may be summarized as follows:

The death rate from typhoid fever in the south is startling and claims about an equal number of deaths among the whites as tuberculosis, and well water is probably the source of infection.

There are more adults ill from typhoid fever during the year than any other disease in Georgia.

Table 2.

	Deaths, All Causes.	Typhoid Deaths, per 1000 Deaths.	Tuberculosis Deaths, per 1000 Deaths.	Pneumonia Deaths, per 1000 Deaths.	Typhoid Cases, 15 per cent.	Tuberculosis Cases, 75 per ct.	Pneumonia Cases, 20 per cent.	Registration Area.		
								Typhoid Deaths per 100,000.	Tuberculosis Deaths per 100,000	Pneumonia Deaths per 100,000.
Farmers. .	96,502	58	106	114	37,710	14,735	55,003	32	147	140
Miners. . . .	5,895	43	97	127	1,709	820	30,000	38	120	77
Physicians	2,322	23	93	87	347	306	1,011	33	168	178
Clergymen	2,062	37	98	95	503	291	980	46	123	255
Lawyers .	1,508	23	107	72	233	213	541	31	139	132
Teachers .	1,256	98	208	95	820	381	600	. .	182	144
Nurses . .	582	56	103	91	220	90	212	47	100	93

Farmers, next to teachers, have the highest death rate.

The average age at death is 28.8 years.

Most writers agree that typhoid fever is a water borne disease. The *New York Medical Record,* in an editorial, says: "While agreeing with a majority of investigators, we believe that water is the chief agent in the causation and dissemination of typhoid fever, and we admit that it may be air borne, being transmited by dust, flies," etc. Dr. Leigh Canney in a recent book regards the question of etiology as a question of pure or impure drinking water. Flies among the poor furnish a means of conveyance of infection, as the writer has often observed cases imported in families in small houses, and the disease spreads to other members of the family.

In this report of cases only clinical diagnoses were made and the suggestion of Professor Osler was adopted, viz., any fever continuing beyond ten days and resisting the influence of quinin may be assumed to be typhoid.

I regret not having a Widal test of these cases to report, but, after all, the clinical diagnoses may be quite as reliable, as only 70 per cent. give a Widal reaction before the end of the first week, according to the New York health department. All the discussions and controversies prove that no routine drug treatment of typhoid fever has any specific value. Of course symptoms should be controlled by appropriate remedies.

Turpentine was the only routine drug used in these cases, and it certainly relieves the intestinal symptoms better than any remedy at our disposal. It has been used longer and more widely than any other remedy, and its popularity still maintains with clinical observers of long experience.

Dr. Baird, at a meeting of the Georgia Medical Association, 1902, gave a résumé of the treatment of typhoid fever by 24 authorities and may be summarized in a few words: rest, diet, cold bath, etc. My own experience convinces me that the above summary represents the facts of the question, and it behooves us to study more closely the details of the rest, diet and bath treatment and our results would give us a greater percentage of recoveries.

As seems to the writer the dietetic treatment is the most important of all and no drug can counterbalance the baneful effect of dietetic sins. Fasting as a therapeutic measure has proved so valuable to me in the treatment of these cases that I account for the low rate of mortality by no other part of the treatment. The pathologic anatomy of typhoid fever shows a condition of gastrointestinal catarrh with hyperplasia, with a great reduction of all the digestive fluids. Saliva is diminished and hydrochloric acid is usually absent in the gastric juice and, in fact, almost every condition unfavorable to digestion exists. Diarrhea is an effort of Nature to throw off what the intestines can not digest. Intestinal ulcers should be assumed to exist in every case, however mild, and the proper treatment of ulcers is rest.

The rational treatment of such a condition is a restricted diet or fasting, then peristalsis can be better controlled by cold application and an opiate may be used if much diarrhea exists.

The eliminative treatment, so called, is irrational and would be unnecessary if there was no surplus of food in the intestines to dispose of.

The active symptoms in the first stage of the disease can be better controlled by fasting for 24 to 48 hours or even longer, than by any other remedy and the effect of any other remedies applied will be greatly enhanced. The effect of the cold bath is much more marked. I have often noticed that the temperature can be reduced 2.5 degrees by a simple sponge bath. Many patients exhibit marked peculiarities as to the effects of cold applications, most cases having an agreeable effect during a high temperature, while in others having an exciting effect. The Brand system being more or less impracticable, recourse is had to the modified cold bath or even a hot bath. Each case should be studied on its own merits and the cold, warm or hot sponging applied accordingly. In fact, some observers have claimed better results from the hot bath. The patient's comfort should not be lost sight of in the bath treatment. It has been my observation that cold is better for some, while warm sponging is better for others, and still in other cases cold and hot sponging alternating has been better. In sthenic cases, with very high temperature causing delirium, ice-cold applications are preferable and in later stages, where the temperature is not excessive but delirium exists, warm sponging has a more soothing effect. In asthenic cases, with hyperpyrexia, the cold and warm alternating seem to act better. Rubbing enhances the effect of these applications and heat is thereby dissipated. It has been stated that 30 per cent. of the entire quantity of blood in circulation remains in the cutaneous system and the intimate relations between the physiologic function of the skin and temperature variations of the body both throw light on the importance of sponging in typhoid fever. An excess of food in the intestines increases peristalsis and favors the absorption of toxins. The writer has observed an increase of several degrees of temperature in a quiescent case by taking a dose of castor oil.

TABLE 3.

Cases.	Color.	Age.	Sex.	Grade.	Gastrointestinal Symptoms.	Nervous Symptoms.	Drinking Water.	Month.	Duration.	Remarks.
1 S. E.	W.	30	M.	Severe.	Marked.	Absent	Well.	September	21	
2 G. B. K	"	60	F.	Mild..	Absent	"	"	"	12	
3 L. A.	"	18	"	Severe.	Marked.	"	"	June.	21	
4 L. A.	"	17	"	"	Absent	"	"	August	24	
5 J. A.	"	8	"	Mild..	"	"	"	"	14	
6 A. C.	"	8	M.	Severe.	Marked.	Marked	"	September	14	
7 J. C	"	6	"	Mild..	Absent	Absent	"	"	12	
8 L. C.	"	4	F.	"	"	"	"	"	12	
9 M. D.	"	30	"	"	"	"	"	July.	20	
10 J. G.	"	20	M.	Severe.	Marked	Marked	"	October.	21	
11 A. G.	"	15	F.	"	"	Absent	"	"	14.28	Relapsed on eighth day from taking solid food.
12 B. G.	"	10	M.	Mild..	Absent	"	"	August.	12	
13 C. G.	"	8	"	"	"	"	"	"	12	
14 W. H.	"	22	"	Severe.	Marked.	Marked	"	October.	28	Had one attack two months previous.
15 W. H.	"	23	"	Mild..	Absent	Absent	"	August	18	
16 J. L.	"	30	"	"	"	"	"	July.	16	
17 A. M	"	40	"	"	"	"	"	September	14	
18 C. P.	"	12	F.	"	"	"	"	April	14	
19 J. B.	"	18	M.	Severe.	Marked	Marked	"	August.	18	
20 C. B.	"	16	"	"	"	"	"	"	16	
21 L. B.	"	12	F.	"	"	Absent	"	September	14	
22 C. L. B	"	48	"	Mild..	Absent	"	"	"	14	
23 O. D	"	20	M.	"	"	"	"	November.	12	
24 C. S.	"	17	"	Severe.	Marked	Marked	"	September	45	Double parotid suppurat'n osteitis of hip and humeri.
25 J. D. T	"	47	F.	Mild..	Absent	Absent	"	July.	28	
26 M. W	"	17	"	Severe.	Marked.	"	"	"	21	
27 J. V. E	"	37	M.	"	"	"	"	August.	20	
28 W. E	"	48	F.	"	"	"	"	"	20	Had small hemorrhage.
29 S. G.	"	18	"	"	"	"	"	September	18	
30 J. B. H	"	22	M.	Mild..	Absent	"	"	August.	14	
31 A. H.	"	21	"	Severe.	Marked	"	"	"	12.28	Relapsed eighth day from taking solid food and getting up.
32 F. A. J	"	25	F.	Mild..	Absent	"	"	"	12	
33 W. M.	"	35	M.	Severe.	Marked.	Marked	Hydrant.	November.	20	
34 M. M	"	18	F.	"	"	"	Well.	September	28	
35 M. M.	"	28	M.	Mild..	Absent	Absent	"	July.	12	
36 J. S.	"	20	"	"	Marked	"	"	June.	14	
37 D. T.	"	25	"	"	Absent	"	Hydrant.	August.	14	
38 T. W.	"	30	"	Severe.	Marked	Marked.	Well.	April.	21.70	Pneumonia and dysentery in convalescence.
39 W. E	"	29	"	Mild..	Absent	Absent	"	July.	14	
40 S. E.	"	12	"	"	"	"	"	"	14	
41 A. B. A	"	23	F.	"	"	"	Hydrant.	June.	14	
42 B. H.	"	32	M.	Severe.	Marked.	Marked.	Well.	August.	20	
43 A. M	"	12	F.	"	"	"	"	"	28	Dysentery in convalescence.
44 G. M.	"	8	"	Mild..	Absent	Absent	"	"	14	
45 C. H.	B.	6	"	"	"	"	"	"	12	
46 N. J.	"	25	M.	"	"	"	"	"	14	Relapsed and died from urinary retention and neglect.
47 L. C.	W.	21	F.	"	"	"	"	September	12	
48 S. C.	"	19	"	Severe.	Marked	"	"	October.	21	
49 N. C.	"	13	"	Mild..	Absent	"	"	Sep'ember	12	
50 F. L.	"	10	M.	"	"	"	"	"	20	
51 L. M.	"	45	"	"	Marked.	"	Hydrant.	"	14.21	Relapsed on eighth day from taking solid food.
52 C. B.	"	6	"	"	Absent	"	Well.	August.	14	
53 C. B.	"	4	"	"	"	"	"	"	10	
54 W. C.	"	30	F.	"	"	"	"	July.	14	
55 R. G.	"	21	M.	"	"	"	Hydrant.	October	14	
56 J. G.	"	27	F.	"	"	"	"	October.	21	Five mo. pregnant and two mo. tedious convalescence.
57 J. P.	"	17	"	Severe.	Marked	Marked.	Well.	"	9	Died ninth day from hemorrhage and getting up in delirium.
58 C. C.	"	7	"	Mild..	Absent	Absent	"	"	10	
59 C. C.	"	4	M.	"	"	"	"	November.	10	
60 G. D.	"	10	"	"	"	"	"	August.	14	
61 P. M.	"	10	F.	Severe.	Marked.	Marked.	"	July.	28	Protracted convalescence.
62 M. A	"	35	"	"	"	Absent	Hydrant.	"	28	
63 J. W. R	"	32	"	"	"	"	Well.	"	28	Complicated the puerperium, tedious convalesence.
64 J. M. V	"	8	M.	"	"	Marked.	"	"	21	
65 A. D.	"	15	F.	Mild..	Absent	Absent	"	August.	14	
66 E. D.	"	13	"	"	"	"	"	"	12	
67 M. B	"	35	"	"	"	"	"	"	21	
68 W. W.	"	10	M.	"	"	"	"	July.	12	
69 D. W. S	"	40	F.	"	"	"	Hydrant.	"	14	
70 C. M.	"	17	M.	"	"	"	Spring.	"	21	Solid food on tenth day; relapse, with pneumonia and death in one week.
71 R. B.	"	4	"	"	"	"	Well.	"	10	
72 G. J.	"	17	F.	Severe.	Marked.	"	Spring.	"	28	
73 F. B.	"	35	M.	"	"	"	Well.	August.	18	
74 V. F.	B.	50	"	"	"	Marked.	"	"	12	Adynamic and alcoholic and death on twelfth day
75 E. C.	W.	23	"	Mild..	Absent	Absent	"	September	12	
76 F. S. B	"	36	"	"	"	"	"	"	22	Second attack, slight hemorrhage in convalescence from milk and lime water.
77 M. L.	"	25	"	Severe.	Marked.	Marked.	"	"	36	Hematuria.
78 S. S.	"	12	F.	Mild..	Absent	Absent	"	October.	14	
79 A. L.	"	14	"	"	"	"	"	"	18	
80 W. P	"	20	M.	"	"	"	"	November.	23	
81 P. G.	"	18	F.	"	"	"	Hydrant.	"	20	
82 L. C.	"	6	"	"	Marked.	Marked.	"	October.	14	Operated on for appendicitis fourth day.
83 C. C.	"	3	"	"	"	Absent	Well.	August	12	
84 H. C.	"	2	M.	"	Absent	"	"	September	12	Occurred with three other cases in same family.
85 A. J.	"	8	F.	"	"	"	"	"	21	
86 H. C.	"	5	M.	"	"	"	"	"	21	
87 S. M.	"	28	F.	"	"	"	"	October.	10	Abortive.
88 E. H	"	5	M.	Severe.	Marked.	Marked.	Hydrant.	"	14	
89 H. R.	"	6	"	Mild..	Absent	Absent	Well.	"	22	
90 M. M	"	18	"	Severe.	Marked.	Marked.	"	"	14	Relapsed, supposedly from taking buttermilk.

It is a clinical fact that emaciation is less from typhoid fever than any other acute disease, and the danger from inanition is slight. A recent writer[1] observes "that emaciation seemed to be independent of the amount of food taken into the stomach," and the same observation has often been made by myself, which would show that nutrition is not dependent on the amount of food taken into the stomach. Many cases run an abortive course after the amphibolic stage under a treatment of fasting and a restricted diet. After fasting 24 to 48 hours a very restricted diet should be given, consisting of broths of beef, chicken, mutton, oysters, etc., coffee, cocoa, egg albumin, peptonoids, etc., in prescribed amounts.

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[1] Lewis Med. Rec., vol lxii, No. 5.

Gelatin is a valuable adjuvant in the dietary of a typhoid patient. It serves three purposes: adds to the relish of the various liquids, lessens the nitrogenous waste from the system and prevents hemorrhage. A teaspoonful three or four times a day is the amount usually ordered and should be dissolved in a little hot water and then added to any liquid nourishment, meat broths, cocoa, coffee, tea, etc. It adds a richness of taste to these slops, which otherwise become tiresome to the patient. The food value of gelatin is recognized and, being in a concentrated form, serves an excellent purpose. When used, emaciation is less rapid. The hemostatic effect of gelatin is universally conceded, but to wait until an intestinal hemorrhage has occurred but little immediate good can be hoped for by its use. It should be used as a routine in all cases to prevent hemorrhage. Very aggravated diarrheic cases do not tolerate it so well, as it may increase tympany. But in these cases it may be used on alternate days in small quantities. Since beginning its use no hemorrhage has occurred. The case should be closely studied, and any excess of food will be indicated by a rise of temperature. To nourish the patient by a minimum amount of food requires a very close study. Milk should be absolutely forbidden, because no one can predict when it will form a curd, which is worse than any solid food. One of my patients had a hemorrhage in convalescence from taking milk and lime water, equal parts. I examined curds the size of a hazelnut in the bloody dejecta. The case was a mild one. It is valuable, however, diluted with two to five parts of coffee, cocoa, broths, hot water, as under these circumstances the danger of curd formation is light.

This plan of dietetic treatment should be continued until active symptoms are controlled and, as improvement advances, nourishment may be more liberally given. Solid food is a danger that offers few advantages to the patient. Nearly all recrudescences are due to dietetic errors. Fasting in late stages and convalescent stages will cause fever, as inanition often causes fever.

Below is a summary of the table of reported cases: Of the cases 87 were white and 3 colored. The youngest was 2, and occurred with 4 others in the same family, and the oldest was 60. Cases under 10 were 20; between 10 and 20, 29 cases; between 20 and 30, 20 cases; over 30, 21 cases. The average age was 19.4. There were 48 males and 42 females. As to the months of occurrence, August claimed 27; September, 21; July, 16; October, 15; November, 5; June, 4, and April, 2. Those classed mild were 58 and those severe 32. Gastrointestinal symptoms were marked in 36 and absent in 54. Nervous symptoms were marked in 18 and absent in 72. The average duration was 19 days, and the same without relapses was 17 days. Five, or 5 5/10 per cent., of the cases relapsed, and all recovered. The relapses were ascribed to taking too early of solid food. Five cases were complicated. Three, or 3.3 per cent., had hemorrhage, two of which were slight and the third immediately fatal from getting up in delirium.

One case (No. 88) was diagnosed appendicitis and on the fourth day an apparently normal appendix was removed and the case pursued a typical course of the disease to recovery.

Case 72 had hematuria and recovered.

Case 24 had double parotid suppuration and osteitis of the humeri, and after forty-five days recovered.

Case 14 had an attack two months previous.

Of the four deaths (4.4 per cent.) Case 46, a negro, can, with propriety, be ruled out, as he was dismissed and I was called to see him in a relapse, in a dying condition, having had urinary retention twenty-four hours.

Case 57 would probably have recovered, but, being without a nurse, she got up in delirium and a fatal hemorrhage resulted.

Case 70 contracted pneumonia on the tenth day of convalescence and died a week later. It was the opinion of my colleague that there was no reinfection of typhoid fever.

Case 64, a negro, alcoholic, died on the twelfth day from asthenia.

Of 87 whites treated there occurred 2 deaths, or 2.2 per cent.

The conclusions to be adduced are as follows:

1. Fasting and a restricted diet are indicated because of pathologic conditions.
2. A clinical fact maintains that emaciation occurs independently of the amount of food taken.
3. All severe cases should be subjected to fasting for 24 to 48 hours to relieve the active symptoms, which exhaust the patient more rapidly than the lack of food.
4. After a fast should be prescribed a restricted diet of broths, diluted milk, etc., in definite quantities.
5. Gelatin prevents too rapid emaciation in certain cases and renders hemorrhage less liable.
6. The cold bath or the modified cold bath is more effective during a fast.
7. Peristalsis favors the absorption of toxins and cathartics should be used only to remove undigested food.
8. The presence of intestinal ulcers should be assumed to exist in every case and the proper treatment is rest, which is better attained by fasting and a restricted diet, thus preventing hemorrhage and perforation.
9. The presence of diarrhea and vomiting indicates the adoption of the fasting treatment.
10. Fasting and a restricted diet shorten the course of the disease and many cases run an abortive course after the amphibolic period.
11. Many of the vaunted cures from specific drugs are dietetic in fact.
12. Recrudescences are nearly always due to dietetic errors.
13. In the above report, 45 consecutive cases occurred without death. Of 87 whites, 2, or 2.2 per cent., died. Of colored, 2 died, and the low mortality of 4.4 per cent. of all cases was ascribed to the above treatment.

TYPHOID FEVER IN COLORADO.

A REPORT OF FIVE HUNDRED AND TWENTY-NINE CASES.*

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DENVER.

We report to-day our conclusions regarding a series of cases of typhoid fever at an altitude of about 5,000 feet, in order to compare the disease as we see it with typhoid fever in general.

There occurred 225 cases in the private practice of Dr. Hall in Colorado, 54 of these being seen in consultation;

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

292 cases, most thoroughly recorded and analyzed by Dr. Claude E. Cooper, Denver, late house physician at the Arapahoe County Hospital, occurred in the wards of that institution between 1896 and 1902. We include only 12 of the cases seen by Dr. Hall in his service at St. Anthony's Hospital, the records of cases at this institution for several years being too incomplete for inclusion. He did not personally see all of the cases reported from the Arapahoe County Hospital, and he here tenders his thanks to his colleagues for permission to use the hospital records.

The males and females were almost equally distributed in the private cases, the numbers being 116 and 109 respectively. In the hospital cases males predominated, 241 to 63.

The total deaths were 77, a percentage of 14.5 per cent. The male rate was 14 per cent., the female, 15.6 per cent. That for private practice, 14.2 per cent., is unduly high, owing to the fact that nearly a fourth of them were seen with other physicians, and were naturally grave cases. Of the 171 cases cared for by Dr. Hall in private practice 16 died, or 9.3 per cent. It is well recognized that the mortality in family practice is generally less than in the hospital, owing to many favoring conditions.

The exact cause of death can not be given in every case, since possibly pneumonia, hemorrhage and heart disease occur in the same patient. As nearly as they can be stated, however, the causes were as follows: Intestinal hemorrhage, 15; general hemorrhage, 3; hemorrhage from face (noma), 1; abortion and uterine hemorrhage, 1; perforation without hemorrhage, 7; perforation with hemorrhage, 7; pneumonia, 14; convulsions, 2; edema of larynx, 1; nephritis, 1; organic heart disease, 2; accidental poisoning by irregular practitioner, 1; heart failure (in three cases after the subsidence of the fever), 7; general toxemia and exhaustion, 15.

Arranged by age, the distribution of the cases is as follows:

8 months of age........	1	31 to 40 years	108
2 years of age............	1	41 to 50 years . .	25
3 years of age............	5	51 to 60 years . .	8
4 years of age............	2	61 to 70 years	3
5 years of age............	9	Age not given .	5
6 to 10 years..............	20		
11 to 20 years..............	128	Total .. .	529
21 to 30 years.........	214		

The great preponderance of cases in adolescents and young adults is very noticeable, over 85 per cent. occurring between 11 and 40 years of age. The deaths were distributed as follows:

Under 5 years......... ..	0 or	0 per cent
Between 6 and 10	2 or	10 per cent
Between 11 and 20.........	15 or	11.7 per cent
Between 21 and 30.	28 or	13 per cent
Between 31 and 40.........	18 or	16.6 per cent
Between 41 and 50.	10 or	40 per cent
Between 51 and 60	1 or	12.5 per cent
Between 61 and 70	1 or	33.3 per cent

In two fatal cases the age is not given. Thirteen of the cases had had a previous attack of the disease, and two have had subsequent attacks, one being reported to us as fatal twenty months after the attack recorded here.

Relapse occurred in twenty-three cases, according to the records. We are practically sure that this percentage, 4.3, is rather too low, for the charts are not all complete. But three of these were fatal, one patient recovering after two relapses, and a total febrile course of four months.

As to symptoms present the records are not complete, and only positive or negative statements are here given.

Rose spots are noted in 270 cases.
Enlarged spleen in 155 cases.
Distended abdomen in 168 cases.
Diarrhea in 119 cases.
Constipation in 77 cases.
Unusually high temperature in 34 cases.
Medium temperature in 196 cases.
Moderate temperature in 103 cases.

Three cases are noted as having temperature over 106, and all died.

Many of these cases were seen before the introduction of the Widal test. It is recorded as positive in fifty instances, but negative findings are not noted. No cases of paratyphoid fever were recognized.

Delirium worthy of record is noted in fifty-eight cases, of which twenty-two died. It does not appear to be an especially dangerous symptom. Distinct chills are noted in fifty-three cases, and chilly feelings in thirty-one. In four of those in whom repeated chills occurred during the course of the disease phlebitis was noted, while two cases with severe paroxysms had none. In one woman the chills were erroneously thought to be septic at first, owing to a recent miscarriage. Phlebitis is noted in twenty cases, but in some of the hospital cases the records are certainly at fault, for Dr. Hall has had as many as five cases on hand at one time in the county hospital. We think this number should certainly be doubled. It is apparently more frequent in the cases that are treated by tubbing. Phlebitis is certainly much more common here than the statistics commonly given would lead one to expect. In January, 1899, Dr. Hall had a patient in St. Luke's Hospital with this complication, and every patient admitted during the previous fall had suffered similarly, probably eight or ten cases in all. But three patients with this complication died. Two cases with double phlebitis recovered. In one case the trouble extended to the veins of the left hip and loin.

Lobar pneumonia occurred in twenty-three cases, fourteen of these dying. No exact record was kept of other pulmonary complications. Hemoptysis occurred in five cases, one of these only being tuberculous. In one case lobar pneumonia was present, in one abscess of lung, while in two the bleeding was unexplained. Two of the cases died, the one with pneumonia and one uncomplicated case.

A distribution of rose spots so general as to resemble the eruption of measles was noted in four cases, while in many others they extended to the limbs, though not to the face.

Pregnancy complicated seven cases, while two developed during the lying-in period. One woman was delivered of a healthy child while the temperature was 104, but recovered without complications. One at the beginning of the seventh month of the pregnancy had a severe attack, with three hemorrhages and relapse, but bore a living child at full term. One in the eighth month died of chronic parenchymatous nephritis, the immediate cause being laryngeal edema. She had two hemorrhages from the bowel, and the Widal test was positive. One died of intestinal hemorrhage in the fifth month. Two cases in the fifth month passed safely through the disease, and one aborted early in the pregnancy and died. Of the two cases developing in childbed one recovered.

In eleven cases such nervous manifestations occurred as frequently give rise to the diagnosis of meningitis, and curiously ten of them recovered. In one case Dr. Hall coincided with Dr. C. G. Hickey in a probable diagnosis of tuberculous meningitis, but the woman developed a severe attack of typhoid fever and recovered. One woman screamed for many days with headache when not under the influence of morphin or other drugs, but after many tub baths made a perfect recovery.

Great interest centers about the heart in this fever. Five cases were complicated with valvular disease. A boy of 13, as he recovered from scarlet fever, came down with typhoid. He died of complicating pneumonia at about the fifteenth day. He presented the systolic thrill and harsh murmur, with cyanosis and dyspnea, of congenital pulmonic stenosis. A girl of 5 years with mitral regurgitation following rheumatism passed safely through the disease, as did a girl of 15 with aortic and mitral leakage of very moderate degree following chorea. A girl of 17, not treated by Dr. Hall, but seen once by him in an emergency and not included in these figures, died in the height of the fever of well-marked aortic regurgitation, being mentioned merely to show the danger of prolonged fever even when compensation has been perfect. A man of 23 with well-marked aortic incompetence recovered. One woman with serious mitral disease recovered from the fever, but died of cardiac failure a few weeks later. One woman of 37 with a very mild attack died of sheer cardiac weakness on the seventeenth day, with absolutely no complications. Neither Dr. Hickey nor Dr. Hall could find any possible cause for such an unusual death, excepting a previous starvation diet. The woman had gone mad over some of the pernicious literature recommending a diet of fruits, and had literally lived on such a diet for months before her death. When doing obstetric work Dr. Hall frequently saw women so weak as to require the forceps from this cause, but did not realize the danger of the writings mentioned as regards typhoid fever.

One man and two women died of cardiac weakness after the fever had long disappeared, and a woman of 67 had serious general edema from cardiac failure during her convalescence, but recovered on being sent to her home in a lower altitude. A feeble girl of 8 years died of hemorrhage from a facial artery due to noma.

Two cases with purulent otitis media recovered. One patient with pleurisy with effusion recovered without tapping, and one died, but we have no record of the exact cause. Gangrene of the right leg from popliteal obstruction necessitated amputation in an epileptic of 36 years. Suppuration of the hip joint occurred in a boy of 15, proving fatal, and a man of 22 with suppuration of the left elbow recovered. The epileptic male just mentioned, another male of 20, and a female of 23 recovered from attacks of confusional insanity following the fever. Since these statistics were gathered a girl of 22 in the insane wards of the county hospital recovered from the mania for which she had been committed months before, as she convalesced from an attack of typhoid.

One male of 28 had acute nephritis of great severity after his relapse, but recovered. The woman already mentioned as being pregnant, and an alcoholic man of 36 died with chronic parenchymatous nephritis during the disease. Many patients presented albumin, but we have no accurate record of its occurrence.

Fourteen fatal cases of perforation have been mentioned. One of these, a boy of 17 who entered the hospital twenty-four hours after the accident, was promptly operated on by Dr. Leonard Freeman, but died, as we had reasons to expect he would do. An autopsy proved that a single ulcer existed but a few inches from the cecum. It would have been an ideal case for operation if only seen earlier. A male of 29 years also died after operation, while a man of 23 recovered after operation by Dr. S. D. Van Meter. He died of fecal obstruction less than a year later, from a band of adhesions about the former wound. A man of 26 whom Dr. Hall saw with Dr. T. E. Taylor, recovered from a typhoid perforation, an ischiorectal abscess opening just to the right of the anus, as a result of the walled-in infection. This had not closed nine months later. After careful consideration we feel sure that this was typhoidal, and not appendiceal, although no Widal test was made.

False symptoms of perforation are noted five times. A boy of 17 had screaming pain in the right flank, rigidity and rise of temperature, but no further symptoms and recovered promptly. A man of 25 had similar pain, partial disappearance of liver dulness, a leucocytosis of 13,000, and then a subsidence of all symptoms. A man of 37 had similar symptoms in his second relapse, and recovered, and at autopsy in a similar case a local peritonitis without perforation was found. In a woman of 30, at postmortem examination, we found some blood in the bowel, though no external hemorrhage had occurred, and bubbles of gas under the peritoneal coat of the small intestine, but no actual perforation. She had presented symptoms pointing toward this accident before death, but had no leucocytosis.

The occurrence of petechial eruption in typhoid is rightly regarded as rare, and as usually of fatal import. In five of these cases this phenomenon was seen, three of them dying. A male of 26 had hemorrhages from the mucous membranes as well, and died. A boy of 16, comatose from the start, had petechiæ limited to the chest, dying in the second week. A mulatto male of 21 with many subcutaneous hemorrhages had widely dilated heart and loud mitral murmur. Dr. Hall suspected malignant endocarditis from the sudden cardiac developments, but autopsy showed only severe and typical typhoid lesions. A male of 26 with many hemorrhages under the skin and edema of the feet, and a male of 39, with a moderate fever and petechiæ, recovered. This rare complication is obviously not to be regarded as necessarily fatal.

Five patients are noted as suffering from chronic pulmonary tuberculosis. A male of 28 died with a pleural effusion, as already mentioned. A female of 42 recovered, as did three males of 19, 28, and 27 years respectively, the latter having a pulmonary hemorrhage during the fever.

Two males aged 20 and 42 years respectively passed segments of beef tapeworm, and both recovered. In a male of 33, who recovered, the plasmodium malariæ was found. He had active chills superadded to his febrile temperature.

Several suppurative conditions are of interest. General furunculosis during recovery is noted but once, but it must have occurred oftener. Abscess of the right parotid gland, opening through the ear and afterward opened externally, occurred in a man who recovered. Noma proved fatal in a feeble girl of 8. An abscess in the left groin from bedsore resulted fatally. Two abscesses of the axilla, one of the breast, one of the neck, and one in the erector spinæ muscles near an old bullet wound, are noted, all the patients recovering. The patient who had acute nephritis had abscesses in the bursæ about the left elbow and right wrist, and one in the buttock, but recovered. The typhoid bacillus was not found, but the cocci of suppuration were abundant.

Peripheral neuritis is recorded in three cases, all recovering; once in the left arm, once in the legs and feet, and once limited to the parts supplied by the ulnar nerves. But three cases of the peculiar neuritis described as "tender toes" are noted, but we recall more than that in the county hospital. They were exclusively in patients who were tubbed, all recovering.

We shall mention briefly some of the rarer complications and curiosities of the series. One woman had a wandering left kidney, with severe Dietl's crises. She became pregnant in convalescence, and no further symptoms from the kidney came to notice. One woman with distinct appendicitis developed typhoid during convalescence. In one woman a large external pile sloughed off. One young man died while vomiting. One woman of 41 died with intestinal obstruction during a well-marked attack of typhoid. Impaction of feces in the rectum required manual removal in one woman. Erysipelas complicated one fatal case. In a boy of 16 who recovered the spleen reached to the median line, but the cause, almost certainly not typhoid, is not specified. In a boy of 10 years jaundice with some enlargement of the liver took place, presumably of the catarrhal variety. He recovered. Pericarditis with fatal result occurred in a woman of 34. Gonorrhea in a male patient pursued its normal course. One patient with serious hiccough recovered. In two instances six cases of the fever occurred in one family. One patient, after a severe attack, had acute lobar pneumonia, affecting in succession three separate lobes, and recovered after months of illness. Marked muscular rigidity was noted in one of the fatal cases with petechiæ. We regard it as an ominous symptom. A female of 18 died in convulsions on the ninth day, and a male of 31 years. In neither was kidney disease recognized.

The treatment in general was symptomatic, the temperature being generally controlled by bathing. It was interesting to compare the death rate among those tubbed with that of those treated by sponging and by electric fan baths.

One hundred and twenty-four were treated by tubbing at a temperature of 70, or as near that as could be used whenever the two-hourly temperature rose to 102.5. Alcohol was given just previous if the heart was weakening perceptibly. This treatment was used in the severer cases generally, and was applied almost exclusively in the county hospital patients. Yet but eighteen of these patients died, a percentage of 14.5, which is exactly the average for all the cases. We regard this as a great triumph for the method, for the average death rate of all county hospital cases was 15.1 per cent., including many of the milder cases not tubbed.

The causes of death of the eighteen patients submitted to tubbing were: In three cases pneumonia alone. In eight cases, intestinal hemorrhage. One of these was convalescent from diphtheria, and had a systolic apical murmur; local peritonitis and pneumonia occurred in one case. Pyelitis complicated another case, and perforation another. Abortion in one case. Convulsions in one case. Perforation in one case. General hemorrhage in two cases. Long-continued pyrexia in one case. Nervous complications and relapse in one case. It is obvious that hemorrhagic complications are less under control by tubbing than other causes of death, and probably perforation as well.

About 350 cases are recorded to have been sponged, but as practically all not tubbed were sponged to a greater or less extent, and as a fan bath was used in a few, we shall not attempt to analyze these cases further.

We may conclude from this analysis of a considerable number of cases covering twenty years in different parts of Colorado that typhoid fever is practically the same disease here as elsewhere. Many cases called mountain fever by some have been included in this series, for we know of no such disease. Typical examples have had hemorrhages, rose spots, Widal reaction and many of the complications of typhoid, and are certainly typhoid. The false name is passing out of use here.

Dr. Hall concluded in 1889, from an analysis of his first 108 cases, that typhoid fever was milder here than in the East. A wider experience convinces him that it does not differ materially in this nor in any other respect from the disease as reported from this and most other countries. He believes that diarrhea is somewhat less frequent with us in Colorado.

We shall certainly continue for the present tubbing in severe cases, the avoidance of medicinal antipyretics, the use of alcoholic stimulants when called for by rapid and feeble pulse, and the recommendation of operation in cases of perforation seen early. We are not yet convinced of the advisability of feeding solid food before the fifth or seventh day after the temperature reaches normal, excepting in cases with exceptionally mild attacks and with clean tongue.

DISCUSSION

ON PAPERS OF DRS. HAPPEL, KRAUSS, HARBIN AND HALL.

Dr. T. B. Futcher, Baltimore—I am not convinced that the cases referred to were not a mild form of typhoid fever. We all know that typhoid fever may present a great variety of clinical pictures; we all know that typhoid fever does not, in all instances, present enlarged spleen, epistaxis, rose spots, etc. There was one point in particular that impressed me, and that was the absence of a frequent examination of the blood serum for the Widal reaction. I believe that before we exclude the possibility of typhoid fever in these cases it is very important that the blood serum should be examined repeatedly for the Widal test. This is the routine at the Johns Hopkins Hospital, an examination of the blood serum in practically all cases of typhoid fever being enforced, especially when the patients leave the hospital, and a certain proportion of the cases show this reaction on the day of discharge.

There is another point that should be kept in mind that possibly they may have a paratyphoid infection. It is well known that in a large number of the typhoid cases among soldiers of the South African war, a number of them did not give the positive reaction after the Widal test, but were considered to be cases of paratyphoid infection.

The occurrence of chills and sweating in this series of cases is of interest. With reference to the coal-tar products it should be kept in mind that they will produce chills and sweating of a fairly severe grade. Chills and sweating may occur at the onset of the disease, at the onset of complications, or at convalescence; it should also be borne in mind that the coal-tar products will produce the same. Until more convincing bacteriologic and pathologic evidence can be brought forward to exclude the possibility of typhoid fever being the cause of these symptoms I think we must be rather conservative in stating that these cases are not cases of mild typhoid fever.

Dr. James Tyson, Philadelphia—While it is far from my wish to make a diagnosis in cases of continued fevers in Mississippi, I feel that in 30 years' experience in the study of fevers the tendency has been to limit the number of continued fevers. Each winter it happens to me to have one or more cases of anomalous fever which elude a diagnosis for a longer or shorter time, and invariably at the end of a certain period the cases will turn out to be typhoid fever, or malarial fever, or some of the more unusual modifications of typhoid fever, such as paratyphoid or colon-typhoid. On the other hand, there can be no doubt that fever may be kept up by irritating causes in the intestines, such as indigestible articles of food, or ptomains.

I was much interested in what Dr. Hall said regarding typhoid fever during pregnancy. In the wards of the University Hospital it has happened to me during the past winter to have had three cases of typhoid fever occurring in pregnant women, and their terminations were quite different from those we are led to expect from text-book descriptions of typhoid fever in the pregnant woman. One was a woman eight months pregnant, and she was delivered successfully of a living child and recovered. The remaining two were pregnant five months, and both passed through an ordinary mild attack of typhoid fever and recovered.

DR. J. A. WITHERSPOON, Nashville, Tenn.—This question I have been studying for ten or twelve years. To say that this fever might be paratyphoid fever is begging the question. If it is paratyphoid fever it, then, is not typhoid fever. The germ of paratyphoid fever is very different from the germ of typhoid fever. However, there is a fever in the southern states which, clinically, is different from malaria or pure typhoid fever. I will detail a few of these differences. Several years ago I suggested for this type of fever "toxenteric fever." Why? Because I did not know the cause of this peculiar kind of fever. I do know, though, that it was due to some infection, possibly in the bowel, but whether it was due to some heterogeneous germs, or specific germs, I do not know. It starts out, as described in Dr. Happel's paper, but suddenly, not gradually; it does not specially occur in the season of the year that typhoid fever does; it occurs in all seasons; it does not occur at any particular age, but may occur anywhere from the cradle to the grave; one attack does not protect against further attacks, but makes one more liable. I have seen five different attacks occur in one individual. The bowels are rather regular and the prostation is early, sweating marked, with an irregular type of fever. I have seen a temperature at 9 a. m. of 105 F., and possibly by 10 or 11 o'clock, without the use of any coal-tar products, I have seen the temperature drop to 101 F. In two or three hours there might appear a sudden rise of temperature, then it comes down again, resembling a septic type of fever. I have yet to recognize the rose-colored spots on these patients which is present in most cases of typhoid fever. The abdomen is not tympanitic, but is rather flat or scaphoid. These patients are constipated with possibly very hard masses, but there is no diarrhea such as we expect in typhoid fever. The tongue is not like that of typhoid, and is not tremulous. There is a lack of hebetude or other nervous phenomena, but rather there is present an irritableness; they exact something, and are rather hungry. Epistaxis is rare. There is a development of herpes labialis in connection with this fever which is rare in typhoid fever. I have yet to see an enlarged spleen. The affection may be paratyphoid fever, but certainly it is not pure typhoid fever.

DR. CHARLES F. MASON, Fort Sam Houston, Texas—I should like to add a few words and add to the testimony of Dr. Futcher, who insisted on repeated examinations for the Widal test if we wish to exclude the diagnosis of typhoid fever in cases of doubtful nature. Where I have been stationed I have seen many cases such as described by the first speaker. It is our custom to examine the blood several times each week both for the Widal reaction and for the plasmodium, with the result that, at some time or other, we have always found one or the other. I wish to emphasize the absolute necessity for repeated examinations. We all know how frequently we find the Widal reaction evanescent.

DR. J. L. CROOK, Jackson, Tenn.—This same question has been freely discussed in our state society. In regard to the diagnosis of these cases, I wish to state that, in my experience, when they have been treated as typhoid fever is treated they practically all recovered. These cases seem to be atypical cases of typhoid fever. With regard to the therapeusis, for five years it has been my plan to institute drainage and antisepsis by the use of calomel and carbonate of guaiacol. In a series of 140 cases the mortality has been less than 3 per cent. When acetozone was used in 9 cases there was no mortality.

DR. R. W. LINDSEY, Little Rock, Ark.—I believe we have a fever in the south that is different from typhoid fever, and from malaria. It is a continued fever, lasting from three to five or six weeks. There are none of the symptoms of typhoid fever, except that it is a continued fever. It is not as grave as typhoid fever. The exacerbations are as liable to occur in the morning as in the evening. Tympany does not occur, and the bowels, as a general thing, are constipated. Until this year, or last fall, I have never had an opportunity of testing microscopically the blood of these cases. Three cases were examined for the malarial plasmodium, and the Widal test made for typhoid fever. These cases lasted three, four and seven weeks respectively. The blood of these cases was examined the first day I saw them, before any quinin was given, and neither the typhoid bacillus nor malarial plasmodium was found. The blood was taken at different stages of the three cases and examined, with like results.

WEAKNESS AND DILATATION OF THE HEART IN CHRONIC NUTRITIONAL DISEASE.*

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I wish to invite your attention for a few minutes to some practical questions concerning certain aspects of cardiac pathology and therapeutics. These questions will be discussed with especial reference to my own experience. This experience, or at least that part of it which I have chosen as the basis of this discussion is perhaps sufficiently indicated by the title. It might be well, however, to add that the material among which cases of weakness and dilatation were found comprised about 600 cases of chronic gastritis, with about the same number of other forms of chronic diseases. These cases all occurred in private office and consultation practice. In all cases the heart was subjected to a careful examination with reference to the clinical changes of volume, either transient or permanent in character, which occur with varying states of tonicity of the cardiac muscle.

In perhaps no other department of practical medicine have greater therapeutic advances been made than in that relating to cardiac disease. If Senac could appear before this Association and ask, to-day, instead of the middle of the eighteenth century, his despairing question, "What can medicine do for dilatation of the heart?" he might receive for answer the records of innumerable relative or absolute recoveries. There are few, if any, better landmarks by which to measure the rapid strides of clinical medicine as distinguished from clinical surgery, and demonstrate the lack of consideration and truthfulness of the unfavorable comparisons thus often made.

The great work of Senac was the first important stone in the foundation of modern cardio-pathology and therapeutics, but the structure was very slow in building. Its outlines only began to assume a distinct form half a century later, with the advent of Corvisart, the great physician of the great Napoleon, and later by the labors and discoveries of Laennec, Bouillaud, James Hope and others.

Until a comparitively recent date the recognized pathology of the heart had too exclusive a reference to its orifices, its valves and its membranes. The muscular tissues of the heart to which these appendages are subservient was, in effect, assigned a secondary rôle.

It would be interesting, if time permitted, to epitomize the survey which I have recently made of the manner in which the great writers on the heart during the nineteenth century, which almost exactly corresponds to the evolution of the subject, have dealt with the heart muscle, but time will permit only a few references. Corvisart said that the heart distended the same as does the bladder with urine, but only considered shock, suppression of menses and hemorrhagic flux among the causes of dilatation.[1] He observed the frequency of dilatation of the heart in tailors, tanners, washwomen and others continually bending forward, and attributed it to compression of the aorta. He really devotes considerable space to the discussion of the heart substance, but it is, of course, in the light of a century-old pathology.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

James Hope[2] more clearly recognized the ordinary changes in the condition of the heart muscle in dilatation, and treated cardiac dilatation as a primary disease.

Walshe[3] gave very little attention to the heart muscle, but made the important observation that "there are cases in which the heart notably loses its consistence, without there being any permanent blood disease or any obvious affection of the organ itself, except a deficiency in performance."

The work of Stokes,[4] published in 1854, was a great advance on any of its predecessors and really presented a very interesting and, at that time, advanced view of the morbid conditions of the cardiac muscle. He notes that the heart muscle is probaly liable to all the vital and organic changes found in muscle structure elsewhere.

The beginning of the last quarter of the nineteenth century witnessed the publication of Hayden's[5] ponderous volume of 1,200 pages, which, with liberal abstracts and epitomes of the work of his contemporaries and predecessors, fully reflected all the then existing knowledge regarding the heart. He was, perhaps, the first to fully recognize the very common clinical connection of dilatation with simple debility and softening of the walls of the heart from anemia and retrograde changes of the tissues without obstruction to the circulation. This volume is in itself an instructive, though somewhat out of date, library on the heart. I can not, however, deal further with this retrospective view of the pathology of the heart muscle.

Balfour[10] has well said, speaking especially of the heart, that the vigor of any muscle depends on the perfection of its metabolism. In practically all cases of chronic nutritional disease the metabolism of the entire body is notoriously at fault, and the heart muscle feels, with all other muscles, the loss of vigor incidental to its perversions. We are familiar with it in the lack of force and endurance of the voluntary muscular apparatus; it is conspicuous in the muscular atony of stomach and intestines, and we have learned to look for it and recognize it as a factor of vital importance in the functional integrity of the heart. In this connection it should be remembered that the nervous system, on which all muscular tissue is dependent for trophic and motor influences, is itself equally dependent on metabolism, with all that this implies, for the proper performance of its functions, and that the heart in such conditions suffers from a perverted innervation as well.

One of the first results of this weakness, so far as the heart itself is concerned, is an inadequate systole. We know that the ventricles of the perfectly normal heart do not completely empty themselves. At the close of every systole there is a very small amount of residual blood remaining in the ventricles. The precise amount must depend on the vigor of the ventricular contraction, and must increase with progressive weakness of the cardiac muscle. In its milder grades this amounts only to exaggerated physiologic distension, and perhaps only occurs when a slight demand is made on the heart for extra work, such as a degree of exercise that would not perceptibly effect a normal heart. As the weakness increases the overdistension results from still slighter causes until, finally, in certain cases it becomes permanent and constitutes what is clinically known as dilatation of the heart.

The occurrence of dilatation is dependent on at least one other important factor, aside from weakness of the cardiac muscle, namely, the arterial resistance. The resulting intracardiac tension is subject to great variations in both health and disease, but, in the absence of organic disease involving the arteries, it is always relatively low in cases of weak heart. But even when relatively low there is considerable pressure, even in the passive state. In health it amounts to perhaps 10 to 12 c.m. of mercury; in debilitated states it may drop to 5 or even much less, but a positive pressure equivalent to several c.m. of mercury is absolutely essential to the functional integrity of the organs supplied and this pressure must be overcome by the contraction of the cardiac muscle. If the heart muscle is unable to force its contents through the arteries against this pressure, an increasing amount of residual blood remains in the ventricles and dilatation results. It is perhaps only rarely that the weakness of the cardiac muscle is sufficient to lead to a continuous dilatation while the patient is in a passive state. The overdistension occurs in paroxysms coincident with a transient rise of pressure, usually the result of exercise. Exercise always raises the arterial tension, both in health and disease, and leads to transient dilatation, which the healthy muscle can overcome but the weak muscle can not, and in weakened conditions of the heart muscle these periods of overdistension are only partially recovered from, and when this occurs repeatedly the various grades of dilatation of the heart, slight or severe, ensue. It is in reality a frequently repeated overstrain of the heart. It is, in effect, precisely what occurs when the healthy heart is overstrained, only the results follow comparatively slight causes. Overstrain of the heart is altogether a relative affair. I think it is Stokes who relates a case in which a patient with an extremely weak heart was slowly improving by absolute rest in bed, not being even permitted to wash his own face. After considerable improvement, but, before being authorized to do so, he sat up in bed and washed his own face and fell over dead. This was simply fatal overstrain of a very weak heart from an apparently very trifling cause. In another case a similar result might follow walking across the room; in a third it would follow a short run to catch a street car or by hurrying up steps; while in a perfectly healthy heart the same result could be produced by sufficiently severe and sufficiently prolonged muscular exertion, as probably occurred in the classical case of the Greek soldier who delivered his message of victory and fell over dead. Hereditary tendencies, or at least an inherent inadequacy of the heart muscle, undoubtedly has much to do with the phenomena in any given case. Some hearts are primarily defective, just as are some livers and some brains, and readily succumb to causes which would not be operative in other cases.

The pathology of the cardiac muscle in the cases under consideration is quite variable. Eichhorst[13] says that weakness of the heart muscle may cause death without any macroscopic or microscopic changes in its structure. However, this is perhaps rarely true. The nutritional disturbances incident to chronic disease lead to various alterations in the texture of muscles in the heart and elsewhere. Barrie says[12] that when dilatation occurs there is always granulo-fatty degeneration of the heart fibers and pigmentary infiltration. In such cases Gibson[11] and others speak of an indistinctness of the striations of the muscular fibers. Probably in all the severe cases there is some sort of change more or less marked in the cardiac muscle. While it is very desirable to have as full an understanding as possible concerning the pathology of each case, it can only be determined with a certain degree of probability. It has, of course, an important bearing on prognosis, but the existence of marked degenerative processes do not bar recovery. In many cases chronic myocarditis is probably the underlying morbid condition. The existence of certain types of chronic inflammation, as well as degenerative processes in chronic nutritional disease, is quite intelligible in the light of modern pathology. These various morbid processes are the result of subnutrition and toxins. The hemoglobin coefficient is usually low and there is scant material for tissue reconstruction, while, in addition and partly as a result, there is defective elimination on the part of the heart muscle itself of its own waste products, as well as of the body in general. The retention of leucomaines and other products of retrograde changes has a still further depressing influence on the function of the heart muscle and favors the development of the anatomical changes already referred to. But, in addition to this, and especially in the class of cases with which I have personally had to deal, we have a new factor in the introduction into the circulation of bacterial toxins produced in excess in the digestive tract. These toxins probably unite with the side chains of the protoplasmic molecules of the heart muscle, just as certain metalic substances are supposed to do with more or less impairment of functional power and, finally, with the production of genuine structural alterations of the character already indicated.

In the cases in which no microscopic alterations can be found in the heart muscle the tissues are softer and more easily torn, as long ago pointed out by Walshe.[3] It can scarcely be that such a physical change can occur in the heart muscle without antecedent structural alterations undiscoverable by our present means of research.

Although not strictly within the scope of this paper, I am tempted to briefly refer to syphilis, the very extensive prevalence of which, among all classes, makes it a frequent factor in the class of cases under discussion. Syphilitic involvement of the heart is probably much more common than is recognized, and is not a very infrequent cause of weak heart, leading to varying degrees of dilatation. Aside from the gummatous disease of the heart muscle itself, and involvement of the coronary artery, there is recognized by syphilographers a syphilitic myocarditis. And there is good reason to believe that, prior to the evolution of such gross changes as this, there is a period of weakness which, in consequence of proper treatment, may never pass into the stage of structural alteration. The hearts of syphilitic patients are very vulnerable, and this cause of cardiac weakness should receive wider recognition than is at present accorded it.

In chronic gastro-hepatic disease there are some reflex nervous phenomena which should be considered in addition to the factors already mentioned. The experiments of Morel and others have shown that, on stimulation of the terminal filaments of the pneumogastric or sympathetic nerves in the gastric mucosa, or possibly of both, there is a reflex spasmodic contraction of the pulmonary capillaries, with a rapid rise of pressure in the pulmonary artery and a transient dilatation of the right ventricle. If reflex irritation of these nerve filaments is continuously produced by a pathologic lesion, Barrie[12] says it may cause persistent dilatation, which may increase until there is tricuspid insufficiency with extreme ectasia of the right ventricle. He adds, however, that its relative infrequency in gastro-hepatic disease points to an individual predisposition which may, of course, be hereditary or acquired through the operation of some of the causes and conditions that I have already considered.

It is unnecessary to occupy time in dwelling on the individual chronic diseases which occupy an etiologic relationship to the condition of the heart muscles under discussion. Among them may be mentioned leukemia, chlorosis, all the different types of anemia, either secondary or those other types which in our ignorance we call primary, chronic diseases of the digestive organs associated with subnutrition and relative failure of elimination, excessive toxic conditions, etc. These various causes act on the heart in at least four ways: First, a failure to supply sufficient nutrient pabulum to the heart muscles because of a weakening of the complicated mechanism concerned in its accomplishment. Second, through the chemical influence of retention products, which are toxic in excess, and the absorption of foreign substances, for the most part, from the gastro-intestinal tract. Third, through the partial failure or perversion of the important phenomenon of innervation of the heart muscle. And, fourth, the purely mechanical factor which is operative from the moment when the cardiac muscle is unable to make an effective ventricular contraction against the resistance offered in the arteries. Sometimes one or several of these causes will predominate, but I think they will be found to fully explain the clinical phenomena presented.

The symptoms of heart weakness and dilatation vary within wide limits. It is scarcely necessary to dwell on the clinical manifestations of fully developed and well-marked dilatation of the heart, with its well-known train of symptoms. It is more important to emphasize the fact that there can be, and frequently is, a recognizable grade of dilatation, with either an entire absence of symptoms or at least such as can be elicited with great difficulty. The earliest symptoms are simply those of a weakened circulation, and in the various types of chronic nutritional diseases, with their associated debility and slight dyspnea following a given amount of exercise, are simply attributed to the general disease present. It is not until the dilatation has proceeded to a degree which will produce valvular incompetency by enlargement of the orifices or separation of the insertions of the papillary muscles, or both, that the obvious clinical picture of heart disease with dominant heart symptoms is presented. This condition, however, is preceded by a long series of events, with any one of which, perhaps, its onward march could have been arrested if duly recognized and properly treated.

The importance of these slighter and frequently unrecognized grades of dilatation of the heart is not limited to the heart itself, but, in addition, frequently furnishes the key to the entire ensemble of symptoms, which, while having a complicated origin, are possibly based more largely on lowered blood tension than on any other single factor.

I have not attempted to make any statistical statement of the number of cases in which demonstrable grades of dilatation have been presented, as such a statement with reference to so vague and diverse a group of cases would appear to be valueless. I will say, however, that in a very large proportion of the cases which have been able to come to my office for examination and, perhaps, subsequent treatment, such a condition of the heart has been found. I should think that possibly 20 per cent. of these patients presented demonstrable enlargement of the heart, varying in degree from an enlargement so slight as to be doubtful until verified by a decreased area of dulness under subsequent treatment, to cases so severe as to make dyspnea on very slight exertion one of the principal complaints in the case. The diagnosis is based principally on the area of deep dulness, which has, of course, to be quite accurately determined. This I do not consider difficult in the vast majority of cases. Of course where there is emphysema or excessive obesity, it becomes proportionately more difficult. Broadbent[9] says that it can not always be determined, and further adds that the so-called auscultatory percussion is of no value whatever. With the last statement I must entirely disagree. By the use of the ordinary methods of auscultatory percussion or, better, by the use of the phonendoscope, with either light percussion or friction, the borders of the heart, and especially the left, can be determined with great accuracy. I have verified the results of these examinations, both by autopsies and skiagraphs, and have the utmost confidence in them. By placing the phonendoscope in the intercostal spaces over the area of absolute dulness and making very light strokes or friction sounds gradually extending outward, the border of the heart is easily recognized. The sharpness of the line of demarkation where the transition of sound occurs is really very striking. I only mention this because there is a more or less widely spread opinion such as that already quoted from Broadbent, that slight changes in the volume of the heart can not be clinically determined with accuracy.

In the severer cases regurgitant murmurs will sometimes be found constantly present over either the mitral or tricuspid area or both. In many of the milder cases, however, where such a murmur is not heard, it can readily be produced, while in others it can be produced with difficulty, and the readiness with which it can be elicited furnishes some indication of the tonicity and recuperative power of the heart muscle. The character of the heart sounds soon becomes modified as the case progresses, the first sound losing its characteristic qualities, more and more approximating to the character of the second, and, at the same time, the interval between the second sound and the first becomes gradually shorter, approximating more and more to the interval between the first and the second, until it finally becomes practically the same.

The treatment of these cases should have in view two principal objects: first, to improve the general nutrition and correct the defects and perversions of metabolism, which are the underlying causes, which includes rational and adequate treatment of any organ or set of organs which may be at fault, among which the digestive organs stand pre-eminent; and, second, when necessary, the application of special therapeutic measures directed toward the heart.

It would not fall within the scope of this paper to make any attempt at a discussion of the multiform methods included under the first heading. It need only be said that it includes and requires adequate nutrition, which means an ample food supply properly digested and assimilated to the fullest extent possible under the conditions presented; effective elimination of the products of retrograde changes which may be unusually toxic owing to morbid perversions in the chemical processes occurring in the tissues; tonic and reconstructive medication, such as the exhibition of iron and bitter tonics where these appear to be indicated; and, finally, the best mental and physical hygiene available under the circumstances of the case.

So far as the second object of treatment is concerned, it will frequently happen that no special measures directed toward the heart will be required, especially in the milder cases. Proper rest for the nervous system and the circulation conjoined with the measures already indicated may be sufficient to restore the heart to its normal condition and size. In many cases, however, I have found such special methods of treatment not only advantageous but necessary. Where the heart is quite weak, with frequent pulse and the blood pressure low, the cautious administration of digitalis for a brief period of time has been of the greatest service to me in these cases. Other heart tonics may also be employed. Such outdoor exercise as is indicated in the case should be graduated, with special reference to the heart, and in most cases forms an indispensable part of rational treatment.

I wish now to speak of the saline carbonated baths as a means held in reserve for the severer cases or even some of the milder ones which for some reason prove intractable. I am fully convinced of their very great value after having treated a considerable number of cases in this manner. I have found, in agreement with Broadbent and others, a remarkable decrease in the area of deep cardiac dulness as a result of a single bath properly administered. In fact, I am not aware of any other possible means of influencing so immediately and directly the dimensions and tonicity of the heart. I have found the left border of the heart more than one centimeter further to the right immediately after such a bath than it was before, and have verified the findings with the fluoroscope. At the same time the pulse will drop in frequency anywhere from 15 to 30 beats, with a corresponding improvement in volume and tone. The greater part of this phenomenal change is comparatively transient, but where treatments are given daily the heart does not lose quite all it has gained, and after three or four weeks of such treatment may attain nearly or entirely its normal size and remain permanently so under favorable conditions, which means, of course, a removal of the causal factors and a continued maintenance of the general health. Gibson[11] says that it is just in this class of cases that the very best results are obtained from the Nauheim methods. I believe this is true, and have certainly had most gratifying results in properly selected cases, although it is not used, as a matter of course, as a routine measure.

With the resistance movement I have had less experience, as my patients have, for the most part, been able to resort to active instead of passive movements; and properly graduated gymnastics and outdoor exercise have appeared to me to be all that was necessary.

In conclusion, I wish to emphasize the favorable prognosis of dilatation of the heart in most cases, even the coexistence of valvular disease not necessarily constituting an insurmountable bar; its relative frequency in chronic nutritional disease, and the strong probability that the milder cases, if unrecognized and neglected, finally present all the clinical features of advanced and incurable heart disease.

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PAPILLOMA OF THE SOLE.*

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A wart is usually an insignificant affection, but when it grows in a confined space, as under the hard, thick covering of the sole, it may cause so much discomfort, it may be so persistent and so refractory to treatment and develop such an ugly appearance as even to simulate malignant disease.

It is not a frequent affection, as I have in my private practice seen only seven cases of it in about five thousand cases of diseases of the skin. In a careful search of the literature of diseases of the skin, mention has been found of only sixteen cases. But I have reason to believe that neither of my own private histories nor the literature give a true indication of the real frequency of the affection. People afflicted usually consult chiropodists and, after being treated, or maltreated, the wart disappears, either as a consequence of treatment or spontaneously. The chiropodists have a most striking name for the affection, calling it "a rose corn." This name is very appropriate to that form that looks like a callosity and, the callosity being removed, one finds a strawberry wart at the bottom of a well-like hole.

Case 1.—The first patient who consulted me for this affection was a large, fat man, 56 years of age, whom I had been treating for eczema. He consulted me June 13, 1897, for what I thought was a corn on the right sole. The corn was very sensitive to pressure. I ordered salicylic acid plaster mull 10 per cent., and had the patient call shortly afterward, when I peeled off the epidermis. To my surprise I found a well, at the bottom of which was a wart-like vegetation. The mouth of the well was perfectly circular and nicely rounded and prominent. I reapplied the salicylic acid, removing layer after layer of the epidermis, till I had the wart well exposed, and then burnt it with nitrate of silver. I did not, however, burn it sufficiently. It is often necessary to press down the nitrate of silver stick into the hole, through the epidermis, although it is very painful to the patient. The wart in this case continued to grow until I feared it was a papillary epithelioma of the sole. After the second, more thorough, burning, however, the affection got well and never returned. In this case there were no other warts seen or complained of in any other region.

Case 2.—Sept. 5, 1898, a man, whom I had under my charge seven years before for syphilis, eczema and herpes simplex, consulted me for what appeared to be a corn under the anterior part of the sole of the foot. The patient had had it mistreated by a chiropodist and, when he came under my care, was suffering much pain. His case was an almost exact repetition of the former one.

Case 3.—On March 2, 1899, a man, 28 years of age, consulted me on account of a painful wart on the plantar surface of the ball of the left toe, which had appeared three months before. The patient was also suffering from eczema between the toes and from premature baldness. The papilloma disappeared under the same treatment as that employed in the two former cases.

Case 4.—On April 27, 1900, a woman, about 30 years of age, consulted me on account of warts on the anterior portion of the sole of the foot. There was one large, flat, round wart, about one inch in diameter and looking like a corn, situated on the ball of the left great toe. This wart was not painful, and on examining it with a lens dark red strings could be seen running up through it. These looked like the capillaries of a soft wart in which the blood had coagulated. It looked entirely different from anything I had ever seen in the way of warts growing under the thick, hard epidermis of the palms or soles. As much of the top was shaved off as was possible without causing too much bleeding. A salicylic acid plaster mull was applied. By May 7, 1900, the large wart had separated out into several individuals, having white plates of epithelium over them, and the red strings above mentioned were now white, probably bleached out by the salicylic acid. This lesion therefore was not one wart, but a bunch of several warts. On this date two other warts were found, one in the very center of the anterior part of the left sole, and two others just in front of the original lesion on the ball of the great toe. June 20, I had the patient use at night salicylic acid, ʒiiss, collodion flex., ℥ii, and in the day time plaster mull. By June 27, two months after she first came to me, the epidermis was thinned down enough to permit of cauterization with nitrate of silver. Shortly after this the warts disappeared.

This was one of the most obstinate cases I have ever treated. The epidermis implicated in the wart was soft, spongy and resistant to the knife.

Case 5.—Sept. 24, 1901, a boy, aged 14, consulted me for hyperidrosis of the right heel; the heel was reddened, and in the hollow of the foot there were a few rusty papules. October 30, I first noticed on the right heel two perfectly round holes, each about 2 mm. in diameter. These holes were filled with a perfectly white detritus, and at the bottom of the holes there were a few red, prominent papillæ. The epidermis was shaved down as close as possible and the papillæ were burned with nitrate of silver and a 5 per cent. salicylic acid plaster mull was prescribed.

Jan. 21, 1902, there was still a little remnant of one of the lesions, which was burned with nitric acid, after which the trouble disappeared.

This patient was an immensely overgrown boy and very stout. He was the only son of a doting mother, who was anxious about his health, because he ate so little at meals, but between meals, his sister told me, he ate constantly, a fact which his mother did not know, or possibly chose to ignore. Everything in the way of fruits, cake, candy and lump sugar disappeared in a miraculous way. These facts are mentioned as the consequent overnutrition very probably had something to do both with the hyperidrosis and the papillomata. He was just such an individual as one would expect to get seborrheic eczema.

Case 6.—Jan. 21, 1902, a boy, 15 years of age, consulted me in regard to papillomata of the plantar surface of the right heel. The first one appeared one year before, and when he consulted me there were about a dozen visible. As much of the epidermis was shaved off as was possible without causing abundant hemorrhage, and the exposed warts were burned with nitric acid. An ointment composed of salicylic acid 20 gr., lanolin and vaselin each half an ounce was prescribed to be worn constantly. By Feb. 8, 1902, this ointment had peeled off the epidermis down to the quick, and a vast number of papillomata were uncovered. The whole heel presented a worm-eaten appearance, showing irregular, steep-edged holes, filled with epidermal detritus. All exposed papillomata were again burned with nitric acid. By February 26 everything looked well.

Case 7.—Aug. 2, 1902, a man, about 19 years of age, consulted me in regard to what appeared to be a filamentous wart on the anterior surface of the right sole. The epidermis was peeled down as far as possible, the wart was burned with nitrate of silver and a salicylic acid ointment (30 gr. to the ounce) was prescribed. By August 6 the wart had died down or retracted so as to leave a circular hole about one-quarter of an inch in diameter, filled with a crumbly white mass, and showing the diminished wart at its bottom. A stick of nitrate of silver was pressed firmly into the hole, the same ointment was applied and in a couple of weeks he was entirely well.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Cutaneous Medicine and Surgery, and approved for publication by the Executive Committee: Drs. H. W. Stelwagon, W. L. Baum and J. A. Fordyce.

Traumatisms, such as direct blows, heavy marching, nails sticking up in the sole of the boot, inequalities in the sock, or in the sole of the boot, have all been given as causes of plantar warts. Lenoble[1] attributed the affection in his case to heavy marching. Gorju[2] reported an instance consequent to walking on cannon balls. In the cases reported in this paper no history of traumatism was present. In three of the cases there was eczema, in one of them herpes, and in one hyperidrosis. All of these may indicate an irritable state of the skin favorable to the development of papillomata, but it is noteworthy that there were no warts found on any other part of the surface in these cases. William Dubreuilh, who has written by far the best paper on this subject, says that neither himself nor Bargues, whom he quotes, has ever found coincidence of warts of the soles and of the palms.

A wart on the sole usually first appears as an abnormally painful, large, lenticular, elevated callosity. After removing the hard epidermal covering, a well-like orifice is exposed with the papilloma in it. This appearance is what has given rise to the name "rose corn." The depth of this well-like hole is one of the surprises of the affection. Pain may be present for quite a long time before the appearance of the callosity. In a case reported by Gorju[2] pain was present for two months before the callosity was noticed.

Warts of the sole may also appear as filamentous threads growing up through a soft, white, elastic epidermal mass, as in Case 4.

A papilloma may also look like a soft tumor, implanted like a cork in the epidermis and emerging from a circular orifice and spreading out on the surface like the cover of a pot.

Dubreuilh says that the pain of the warts, like that of corns, is influenced by changes in meteorologic conditions. I do not remember any of my patients to have complained of this, but, as I never inquired, it may have been present.

Warts of the sole, as elsewhere, may disappear spontaneously; they may, however, last for years and cause a vast amount of pain and inconvenience. Lenoble reported a case where the tumor had begun twenty years before the demonstration of the patient before the dermatologic society. Melchior Robert had two cases, each lasting two years.[3]

Dubreuilh recommends curetting as the most rapid and effective treatment. Although the curette may have very little influence on the hard, resistant walls of the cavity, this does not matter. The essential is to clear out the contents, which can be readily done. The profuse bleeding can be stopped by pressure, and the wound is to be dressed according to ordinary surgical principles.

Bargues recommends frequent cauterizations with pure nitric acid. The objections to cutting out such growths are the difficulty of reaching the base through the thick epidermis, the great pain occasioned by the cutting and the liability of leaving a cicatrix in a situation where a scar is very undesirable. All these disagreeable features may be avoided by first softening the hard epidermal covering, and so exposing the part to any treatment, such as would be applicable to warts occurring on the thin skin of other parts of the cutaneous surface.

THE MANAGEMENT OF FEVER IN GENERAL.

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In the present state of knowledge fever must be looked on as a symptom-complex resulting from some derangement of the bodily chemistry, from some disturbance in metabolic equilibrium, which may be brought about in a variety of ways. The causative factors may be generated within the body, or they may be introduced from without, in either event operating through the agency of the nervous system. Thus, fever may result from the retention within the body of the excrementitious products of retrogressive metamorphosis, as in cases of uremia; in consequence of profound changes in the blood, as in cases of anemia; from exposure to intense heat, as in cases of insolation; and it occurs readily in children—in whom the nervous system is notoriously unstable—on slight provocation, such as gastrointestinal derangement and even emotional influences. Most commonly, however, fever is due to changes secondary to infective processes—in other words, to the toxic effects of the products of bacterial and cellular activity.

Of the ultimate mechanism of the febrile process nothing definite is known. It is a well-recognized biologic fact that plants and animals are provided with the means for adapting themselves to variations in the surrounding temperature, so that they produce or conserve a greater amount of heat when exposed to low, and a lesser amount when exposed to high, temperatures. Loss of heat in man is counteracted by contraction and favored by dilatation of the peripheral blood vessels. It is reasonably certain that this regulatory power is lodged in the central nervous system, and it is believed that it is under the control of a hypothetical thermotaxic mechanism, which maintains the relations between heat-production and heat-dissipation under varying conditions.

The most distinctive and the most constant feature of the febrile process is elevation of temperature. Although it is customary to attempt a differentiation between fever and pyrexia, it is a question whether such a distinction can be successfully made. It is true that occasionally certain conditions ordinarily febrile, such as typhoid fever, typhus fever, septicemia and scarlet fever, are unattended with pyrexia, but under such circumstances it may be that the pyrogenic substances usually produced are not generated or are not absorbed, or that their effects are neutralized by antipyrexial substances generated within the body. Nevertheless it is doubtful whether we can recognize a febrile process in the absence of elevation of temperature, or if pyrexia occurs in the absence of fever. Those who endeavor to maintain a distinction between fever and pyrexia take the ground that elevation of temperature of non-febrile origin is due to either increased heat-production or diminished heat-dissipation, or to both, while the elevation of temperature attending the true febrile process is due to an elevation of the heat-regulating mechanism to a higher level without alteration in the relation between heat-production and heat-dissipation. It has been thought that elevation of temperature in the presence of infectious diseases is a conservative process, perhaps having antibacterial or antitoxic value, but as to the accuracy of such a view the evidence is not con-

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[1] Ann. de Derm., S. 3, T. vi, p. 1156.
[2] Ibid., p. 441. Quoted by Dubreuilh.
[3] An. de Derm. et de Syph, Serie iii, Tome [illegible]

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Other symptoms of the febrile process, such as accelerated action of the heart, increased frequency of respiratory movement, circulatory changes, alterations in secretion, assimilation and metabolism and in function generally, may be due to the same factors as the underlying morbid state or to the pyrexia, or to a combination of the two. The problems, therefore, that confront the clinician in the management of a patient exhibiting fever comprise the removal of the causative and underlying factors in so far as this is possible, and the restoration of the metabolic equilibrium, whose derangement is manifested in the various disorders of function. Often little or nothing can be done to fulfill the first indication, as the underlying morbid process is a specific and self-limited one insusceptible of abortion or abridgement, but unless there be some contra-indication, some form of elimination or evacuation or attenuation may with advantage be instituted, such as emesis, catharsis, diaphoresis, diuresis, enteroclysis, hypodermoclysis, intravenous transfusion. Through emesis irritants will be removed from the stomach and infection by way of this organ averted or absorption of poisonous substances from its cavity prevented. Catharsis will perform the same office for the intestinal tract, and besides exert a derivative effect. A like statement may be made with regard to diaphoresis for the skin, and with regard to diuresis for the kidneys, while by means of intestinal, subcutaneous and intravenous infusion poisons circulating in the blood will be diluted, and their elimination through the emunctories expedited, while a useful stimulating influence will be at the same time exerted.

With the aid of the measures named it may at times be possible to remove the primary cause of disturbance, but even when this can not be done we may be able in this way to mitigate the severity of its effects, and thus in part contribute also to the fulfilment of the second indication, namely, the restoration of the metabolic equilibrium and the correction of disordered function. Reduction of temperature may be indicated when the pyrexia is excessive, or has been unduly long continued. It is best effected by the application of cold, wet or dry, in the form of the tub bath, the sponge bath, the sprinkle, the affusion or compress, the spray, the coil, the ice bag or ironing with ice. Antipyretic drugs are as a rule not necessary, while their use is at times attended with danger. To sustain the respiration and the nervous system, alcohol, aromatic spirit of ammonia, strychnin, digitalis, strophanthus, caffein or atropin may at times be needed. Should delirium and restlessness persist despite such treatment, bromid, chloral or morphin may be administered cautiously. The diet should be simple, bland, nutritious, easily assimilable, including milk, broths, eggs, beef juice and similar articles. Cracked ice and cool water or lemonade or orangeade and the like may be given with reasonable freedom, preferably in small amounts frequently. A daily movement of the bowels should be secured, if necessary by means of enemata or by the cautious administration of calomel followed by a saline.

Statue of Pasteur at Chartres.—The portrait statue recently unveiled at Chartres deserves more than a passing mention, as it is the work of a physician, anatomist and sculptor, a native of the town, Dr. P. Richer, now of Paris. The marble bust of Pasteur rises above a bronze bas-relief depicting scenes in the campaign against anthrax in sheep by the inoculations originated by Pasteur which have saved the chief industry of the province from destruction. The total height of the work is nearly fourteen feet, while the base is twenty-two feet in diameter.

EARLY EYE SYMPTOMS IN A CASE OF MYASTHENIA GRAVIS.

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In a thesis[1] for the degree of M.D. at Cambridge on the subject of "Myasthenia Gravis," Chas. S. Myers records the undoubted and completely studied cases of this disease. His list contains 22 cases; in 12 there was partial or complete external ophthalmoplegia, in 9 diplopia, in 14 ptosis. These findings and the fact that in 13 of the 22 cases in Myers' list the paralyses of the eye muscles were of the very early symptoms that showed themselves, suggests the publication of the history of the eye symptoms of the following case.

Fortunately, our case has not been completely studied (Myers includes only cases that have come to autopsy), but it has gone far enough to emphasize the fact, which agrees with the findings of Myers and which has been pointed out before, e. g., in the recent article of Sir William Gowers,[2] that the eye symptoms may be the first complained of. The early diagnosis of the disease is certainly desirable, and may be very important, because of its bearing on treatment. It is reasonable to suppose that the chances for recovery will be favored by an early diagnosis, for suggestions have come regarding treatment as our knowledge of this obscure disease has increased, and cases have been reported in which the patients appear to have recovered. The following is an abstract of our notes:

Nov. 6, 1899. W. E F., male, aged 20, a telegraph operator by occupation. Complains of red and uncomfortable eyelids, of blurred and double vision; when he looks at anything, it at first appears double, and he has to close one eye to see. The eyes have given trouble during the past summer. There is a chronic conjunctivitis. L V.=6/9; R. V.=6/7. Esophoria 22°. L. hyperphoria 8°. Accommodation unaffected. Refraction under homatropin and cocain:

L. V.=6/5 with —1.00 D. Sph. —0.50 D. Cyl. Ax. 25°.
R. V.=6/5 with —0 75 D. Sph. — 0.25 D. Cyl. Ax. 120°.

The above correction, less 0.25 D. Sph., was given for constant use, and the patient was asked to return within ten days or two weeks for observation.

Nov. 17, 1899.—Patient states that he is improved, but still complains of blurred vision. Examination shows esophoria 12° (a decrease of 10°), left hyperphoria 8°. Encouraged by the decrease of esophoria, the patient was told to continue the use of the glasses and to report again in two weeks.

Dec. 8, 1899 (one month after the first examination). The patient states that he can work all day and until midnight, and that there is no blurring of the vision. No esophoria, left hyperphoria 3°.

Jan. 4, 1900.—Has been overtaxing the eyes, and they are red and weak again. Has some double vision at times. Exophoria 1°; right hyperphoria 3°.

The patient did not return again for two and a half years.

July 3, 1902.—Recently has had double vision, and "focusing the eyes is difficult." Exophoria 11°, no hyperphoria. Accommodation normal, and the pupils react normally. Vision with glasses, left eye and right eye, 6/9. Has not noted anything wrong in his general condition Advised re-examination of the refraction.

Aug. 6, 1902.—The patient returns complaining of the same symptoms that troubled him one month ago. Refraction under homatropin and cocain:

L. V.=6/5 with —1.62 D. Sph. —0.50 Cyl. Ax. 60°.
R. V.=6/5 with —1.50 D. Sph. —0.50 Cyl. Ax. 110°.

The above correction, less 0.37 D. Sph., was given for constant use, and the patient was asked to return shortly.

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[1] Journal of Pathology and Bacteriology, 1902, September, vol. viii, No. 111, p. 306.

[2] Myasthenia and Ophthalmoplegia. British Med. Jour., 1902, May 24.

One month and twenty days later he returned, when there was paralysis of convergence and slight ptosis of the left upper lid. The pupils reacted normally; the accommodation was not affected, and the patient said that he could work at his desk very comfortably when one eye was closed. The fundus was normal. He was referred to Dr. H. N. Moyer, who made the diagnosis of myasthenia gravis, and exhibited the patient before the Chicago Neurological Society.

Although the findings in this case will be more completely published later, it seems appropriate to call attention here to some of the facts pointed out by our notes. The most important one is that already cited, that the eye symptoms in this disease may be the first signs of trouble. Of course, this is assuming that our patient was afflicted with myasthenia gravis, when he complained of double vision in November and December, 1899. Even if it is not granted that the disease existed at that time, it seems safe to venture the opinion, in the light of the after-history, that as marked a variation in the muscle balance as this case showed between Nov. 6 and Dec. 8, 1899, must attract unusual attention and be carefully studied, and, if possible, satisfactorily explained.

The absence of involvement of the muscles of accommodation in September, 1902, (when he could work at his desk very comfortably if one eye was closed) is interesting. Based on observations up to that time, this case agrees with the findings of Myers, who notes the absence of involvement of the ciliary muscles in the cases studied by him. The possibility of the escape of the ciliary muscle in this disease, and the fact of the difference histologically between it and the external muscles, could well give rise to some speculation. This, however, is upset by Gowers' report, in whose case there was interference with accommodation, and the same is now true of our patient.

The variation in the refraction may have some significance. According to our examinations, which were made with homatropin (homatropin hydrobromate, gr. x; cocain hydrochlorate, gr. x; water, ℥i, of which mixture a drop was put into each eye every five minutes for thirty minutes, and the examination was made forty-five minutes after the last application), the myopia increased 0.75D, and the investigation of the subject brings a letter from the patient, which says: "In early life I seemed to be able to see fully as far as anyone, and, so far as I know, my vision was not shortened until just previous to my first call on you." It will be recalled that at the time of the first examination there was slight myopia. If there is any relation between the disease and the myopia, it would be curious. How is it to be explained?

The cessation of symptoms in this case for over two years calls attention to one of the three signs, which Myers says may be described as pathognomonic of this disease, viz.: exacerbations and remissions shown in its course, and warns us to be careful about pronouncing a recovery in any given case.

Clinical Report.

PYONEPHROSIS WITH A KIDNEY-COLON FISTULA.

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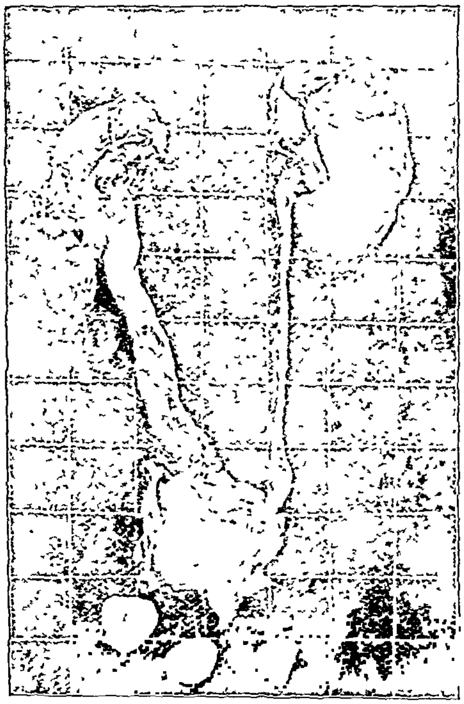
History.—The patient, a man, aged 37; white; occupation railroad conductor; entered the service of Dr. Gordon K. Dickinson at Christ Hospital, Jersey City, for operation, with a diagnosis of vesical calculus.

Family history was negative. The patient had the usual diseases of childhood; twenty-five years ago an attack of typhoid fever; five years later a gonorrhea and a slight stricture of the urethra. He uses tobacco and alcoholics in moderation. Two and one-half years ago he began to complain of a burning sensation, and often severe pain on micturition, with interference to the free passage of urine, and at times a sudden stoppage during the act of passing it.

He states that he has never passed blood in his urine. Lately he noticed that he was losing weight and appetite. He states he has had no chills or fever since the attack of typhoid fever 25 years ago. He gives no history of constipation or diarrhea, and the evacuations of the bowels are regular. His temperature for the three days previous to operation was normal and subsequent to it not above 100 degrees.

Operation.—A suprapubic lithotomy was performed and three calculi weighing collectively 168 grams were removed. There was no suppression of urine subsequent to the operation. The third day the patient died.

Necropsy.—All the organs, with the exception of those later mentioned, were normal, save that the intestines showed some slight adhesions. The bladder wall was much thickened. The interior of the viscus had a ribbed appearance. The veins were somewhat prominent and the mucous membrane was of a yellowish color, and covered with shreds of mucus and urinary salts. The right ureter measured one inch and a half in diameter, and was of a leathery consistence. The left ureter was about three times the usual size, being somewhat tough to the touch.



The right kidney was normal in size and was adherent at its lower end to the colon. On sectioning it proved to be a typical pyonephrotic kidney, only a thin wall of kidney structure, possibly one quarter of an inch thick, remaining. It was connected, as shown in the illustration, with the colon, by a fistulous tract one inch long. The left kidney was much enlarged, the capsule non-adherent, and projecting from its surface were three cysts, the one shown in the illustration at its upper portion being two inches in diameter. All these cysts contained a urinous fluid. This kidney showed a chronic diffuse nephritis and contained two half-inch calculi in its pelvis.

41 Crescent avenue.

Rules for writers, as given by the *Saturday Evening Post*, are as follows: 1. Have something to say. 2. Say it. 3. Quit writing.

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A METHOD OF RENDERING ULTRAMICROSCOPIC PARTICLES VISIBLE.

During the last few years bacteriologists have come to attribute a rapidly increasing number of diseases to microbes that are too small to be seen with our best microscopes.[1] With these instruments and the ordinary method of illumination Helmholtz and physicists in general tell us that it is not possible to get a clear image of an object that is less than ¼ micron in diameter. Recently, however, two German physicists, Siedentopf and Zsigmondy[2] have perfected an apparatus by means of which they are enabled to see particles having a diameter of 0.005 micron or even less. They make use of the best microscope that can be furnished by Zeiss and illuminate the preparation to be examined with a cone of intense sunlight or light from an electric arc. The light is concentrated by means of a system of condensors, and the vertex of the cone thus formed strikes the axis of the microscope at right angles and illuminates the preparation in such a manner that none of the light enters directly into the objective. Under these conditions ultramicroscopic particles lying in the field of the objective will send enough light through the microscope by refraction and reflection to give a clear image. These images, however, are merely luminous points, the brilliancy of which varies directly with the size of the particles. In order that two particles lying side by side may give two distinct images it is necessary that they be placed at least ¼ micron apart. Particles of considerable size, 0.1 micron or more in diameter, give two images, one reddish and the other greenish yellow. From the appearance of these images it is not possible to judge the size and shape of the particles, although the larger particles are more brilliant than smaller ones.

Further details may make this a little plainer: The observer and his instrument are placed in a dark room, in one of the walls of which is a small opening provided with an iris diaphragm. By means of a heliostat placed outside, a ray of sunlight, or electric light, is reflected horizontally into the dark room through the opening in the iris diaphragm. This ray of light strikes a rather large lens, which throws a real image of the sun on a small slit copied from the microspectroscope of Engelmann. The size of this slit can be accurately adjusted by two micrometer screws. It can be varied from 0.05 mm. to 0.50 mm. in width by 0.1 mm. to 2.0 mm. in length and must vary according to the size of the particle to be examined. Behind the slit is placed a second iris diaphragm, a polarizer, and then a second lens, which forms an image of the slit one-quarter its actual size. Behind this image is placed a microscopic objective (AA of Zeiss), which acts as the last condensor and forms a second image of the slit, 1/9 as large as the first one, or 1/36 as large as the slit. This small image falls on the preparation to be examined and intensely illuminates a field about 1.5 microns deep by 3 microns wide. A few additions must be made to the microscope. For the examination of solids a small additional stage 2 by 4 cm. is fastened to the large stage of the microscope stand. This miniature stage can be moved up and down by means of a fine screw and thus enables the operator to bring his preparation into the path of the illuminating rays. For the examination of liquids the inventors have devised a small container which can be screwed to the objective. This brings the first lens of the objective in contact with the liquid and obviates all focusing. Provision is made for moving the liquid and thus bringing different particles into the field of study. The sides through which the light enters and leaves the container are best made of quartz which has been deprived of its double refracting quality by melting.

The authors of the memoir have already carefully studied the small particles of gold that are found in glass which has been colored ruby red with a small quantity of this metal. With the ordinary illumination and the highest magnification obtainable with a Zeiss microscope this glass appears perfectly homogeneous. By using the intense illumination obtainable with their new apparatus, each individual particle becomes visible as a minute luminous point. The size and weight of these particles can now be approximately determined in the following ingenious manner. The amount of gold in 1 cu. mm. is determined by chemical analysis, $= W$ mg. The number of particles in a known bulk of glass is determined by counting and from this may be calculated the number in 1 cu. mm., $= n$. It now follows that the weight, w, of each particle is $w = W/n$. The specific gravity of gold is about 20, and hence the volume, V, of each particle is $V = W/20n$ cu. mm.

The authors have also begun a study of colloidal solutions and Mouton[3] has suggested the use of the apparatus in the study of bacteriology. In order that a transparent medium, containing ultramicroscopic particles, may lend itself for examination it must fulfill the following requirements: 1, The particles must not be less than 5 microns in diameter; 2, they must be at least 0.25 micron apart; 3, the index of refraction of the particles must be different from that of the medium in which they are suspended. Nothing has as yet been done in the study of ultramicroscopic organisms, but, as Mouton suggests, much is to be expected from this new field of investigation. So far the best evidence of the existence of pathogenic agents too small to be seen is furnished by the results of filtration experiments. In a large number of animal diseases of unknown etiology the virus has been found to remain active after passing through solid filters that ordinarily hold back even the smallest known bacteria. So far extreme minuteness of size is the most satisfactory explanation of such phenomena. If the method reviewed in the foregoing proves of service in the study of etiology, we shall have a further and striking example of the fact that progressive medicine is largely dependent on the application of physics and chemistry to the study of disease.

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[1] The Journal A. M. A., Dec. 14, 1901.

[2] Annalen der Physik., 1903, x, 1.

[3] Bull. de l'Institut Pasteur, 1903, i, 97.

DANGER FOR AFTER-DINNER SPEAKERS.

The importance of the study of blood-pressure in pathologic conditions has become generally recognized, but its physiologic variations are hardly of less interest. There are some conditions, not directly pathologic in themselves, but readily made so, in which variations of this factor may have a supreme importance. In an article in the *Lancet*,[1] and abstracted in THE JOURNAL,[2] Dr. George Oliver describes the periodic variations of blood-pressure, especially its increase, and the factors which produce this increased pressure. He finds that the digestive wave of increased blood-pressure is a predominant one, and that it is only temporarily affected by exercise, temperature, etc. There is a uniform rise after eating of some 12 or 18 c.c. of mercury, as shown by the hemodynamometer; the upward rise is rapid, occurring within an hour or little more, while the decline is gradual, and lasts until nearly the next meal time. Thus the rise after a moderate meal is less than after a full one, but the fall occupies about the same time in either case. It is a little surprising at first thought that a rise of blood-pressure should occur simultaneously with the congestion in the splanchnic region attendant on digestion, but Oliver shows that there is a systemic congestion with the splanchnic dilation, with increased peripheral arterial tonus, and it is probable that this plays a physiologic part in the nutrition in causing, as he points out, concurrent exudation into the tissues of nourishing fluid expressed from the blood into the interstitial spaces. The pathologic or semi-pathologic significance of this fact is that of the danger of aggravating the normal physiologic blood tension into a pathologic condition by other factors which may aggravate the tension, such as mental or physical work.

It has long been known that a man is not at his best for hard mental work directly after a hearty meal, but the real dangers of work under such conditions are perhaps hardly appreciated. The tension is increased not only in the arteries of the body, but also, in all probability, in those of the brain, and this makes it easy for a weakened point to give way. The still unsettled question whether or not vasomotor nerves exist for the cerebral arterioles here suggests itself with the consequent queries as to the regulation of the cerebral circulation. It certainly does not appear that brain hypertension is materially relieved by any splanchnic diversion.

We recently have had a striking instance of death from apoplexy occurring in a prominent physician while making an after-dinner speech, and the notable death of Hon. William Windom a few years ago under similar circumstances will be remembered; and still other cases might be mentioned. The dangers from this cause have not been recognized, but when we remember that these public banquets involve a pretty hearty ingestion of food and a consequent rise of blood-pressure, it need not be wondered at that sudden deaths from "apoplexy" during after-dinner speeches are often recorded.

Apoplexy is a well-known possibility of mental strain; the weak point may be unknown to the subject himself and not revealed by any objective symptoms. The individual may have passed a life insurance examination successfully only a short time before, as is reported to have been the case with the physician above referred to, but the special stress becomes too strong for some point of weakness, and the result is fatal. It is not work, whether mental or physical, that kills. Intellectual workers, as a rule, are among the longer lived, but special stress under certain circumstances, such as post-convivial occasions when the normal tendency to rise of blood-pressure in the peripheral circulation is most marked, may be disastrous. This danger of mental effort directly after eating is one that possibly needs to be emphasized.

We do not wish to attribute too much importance to the idea, but it is one that is based on physiologic facts, and, therefore, theoretically at least, worthy of attention. It might, perhaps, be well from a hygienic point of view—and possibly from other points of view—if after-dinner speaking were dispensed with.

THE CONTROL OF MALARIA.

Based on the facts that the diagnosis of malaria can be made by microscopic examination of the blood, and that the malarial parasites are destroyed by the proper, continued administration of quinin, Koch and his collaborators instituted a systematic campaign toward the complete eradication of malaria in several more or less well circumscribed districts. They assumed that the malarial parasites can live only in mosquitoes and human beings. If the truth of this assumption be accepted—and there is no reason to question it—it follows that it becomes possible to eradicate malaria in either one of at least two ways, namely, either by destroying the malaria-carrying mosquitoes, thus preventing the parasites from multiplying and infecting new patients, or by securing such control of the malarial patients in a given locality that all the parasites in their blood are destroyed by the prolonged use of quinin, thus again preventing further multiplication of the infecting agent.

It is the latter method that Koch has put into practice, and the reports[1] on the work so far indicate that the results are satisfactory. Certain well-defined areas infested with more or less malaria were selected and placed under the supervision of competent men to look after the details. Thus an island, owned by one man, and containing a population of a few hundred people, a certain percentage of which generally suffered from malaria, was placed under the complete control of Professor Frosch. First systematic blood examinations were instituted and every case of malaria thus revealed was subjected to a thorough treatment with quinin, the administration of which was continued for three months after the active symptoms had subsided. Naturally, this procedure was repeated, and with the result that at the end of two years the malaria was destroyed, at least for the time being. Other reports show that in this way it is possible to greatly limit the disease, even in places where the population is more actively fluctuating, and in which the liability of the introduction of new cases of malaria is much greater. In these experiments—for experiments they were, though on a large scale—no special precautions were taken against the mosquitoes.

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[1] June 13.

[2] July 4, p. 63.

[1] Zeitschr. f. Hyg. u. Infektionskr., 1903, xliii, Heft 1.

It would seem that in order to render a region permanently free from extensive malarial outbreaks it would be desirable to institute also measures looking to the destruction of mosquitoes, as recommended by Ross especially. Of course, if there are no malarial parasites in the blood of the inhabitants of a community then there can be no danger of mosquitoes carrying the disease to others. But so long as there are present the proper mosquitoes (anopheles) the immigration of new cases of malaria, which it might be impossible to prevent, may become the starting point of a new crop of malaria. Koch's method appears to be perfectly practicable, however, and the results now published show what great work can be done to limit a disease when its mode of dissemination and nature are so thoroughly understood as is the case with malaria. In order to carry out successfully undertakings of this kind it is necessary to perfect comprehensive organization under expert guidance, and to follow out the principles laid down with the most conscientious attention to details.

ROTATION OF HOSPITAL SERVICES.

In his address as chairman of the Section on Practice of Medicine at the New Orleans meeting of the Association,[1] Dr. Thayer refers to some of the evident shortcomings of the majority of our public and semi-public hospitals. He says that the most serious hindrance to advance in clinical study and teaching is the prevalent custom of rotation of hospital services.

Probably no competent, thoughtful medical man can question the force of this criticism. The first requisite for systematic clinical teaching and study is continuous, permanent service. Nothing but perfunctory, routine work can be expected when the chief of a service changes every three to six months. In business undertakings of all kinds, in schools and other institutions such rotation of service does not obtain. It exists in so many of our hospitals on account of the fact that physicians give their time and service to the hospitals without any direct compensation. The rotating service is a makeshift to lessen the individual burden.

If our hospitals are to grow in usefulness and develop progressively this makeshift must give way to the fully organized services with permanent chiefs and graduated staffs of assistants down to the interne and clinical clerk, as outlined in Dr. Thayer's timely address. The advantages of this plan to all interests concerned—the patients, medical teaching, medical investigation—are so evident and have been so often emphasized in these columns that it need not be dwelt upon in detail at this time. This is the day of organization in all lines of work of general importance. Our Association is passing through this stage in its development with so greatly increased a usefulness that it already may be pointed out as an object lesson to be followed in other directions of vital importance to medicine in our country. The next order may well be the earnest planning for a thorough reorganization of the hospital services. In every large city of the United States are public and semi-public hospitals in which the work suffers from lack of adequate organization to such an extent that conditions in many places really can not stand with credit even hasty investigation.

The first step in this advance must come from the medical profession itself. It is not creditable to a great profession like ours that its members permit themselves to be party to slipshod methods of hospital work merely because politicians and lay managers will not or do not know enough to institute rational principles into the hospitals in their charge. Our students suffer under the present system because of the great lack of opportunity to study disease in its manifestations in the living and the patients in the hospitals suffer because they do not receive the best care and treatment, to say nothing of the more indirect but far-reaching evils that must follow the sending out each year of so many hundred admittedly unqualified young men and women to practice medicine. We hope that continued agitation of this subject soon will awaken the altruistic spirit that ever must guide the medical profession, and that systematic efforts be made to improve the present conditions in our general hospitals.

THE DANGERS OF GELATIN INJECTIONS.

Since gelatin injections were first recommended for the control of severe hemorrhages in various organs, and for the treatment of aortic aneurism, they have been used quite extensively. Much has been said in favor of this method, but several deaths have resulted. The fatal results were due to such complications as septic thrombosis, phlegmons, malignant edema, and particularly to tetanus.

Several communications have recently appeared which again strongly emphasize the dangers connected with the subcutaneous injection of gelatin. Chauffard[1] reported a fatal case of tetanus following a gelatin injection, and states that seventeen similar fatal cases have previously been placed on record. Dieulafoy[2] a few weeks later reports another instance of fatal tetanus developing after a gelatin injection given to control a severe tubercular hemoptysis, and he adds four more cases not included in Chauffard's statistics, bringing the total number of such deaths to twenty-three.

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[1] The Journal A. M. A., July 4, 1903, p. 1.

Quite an elaborate study on the dangers and the therapeutic value of gelatin injections has just been published by Doerfler,[3] who has twice lost patients from tetanus following subcutaneous application of gelatin. In one instance the method was resorted to to control a severe postpartum hemorrhage, in the other case to stop a tubercular hemoptysis.

It is now well known that fatal tetanus following gelatin injections is almost universally due to the introduction of tetanus spores with the gelatin in which they were contained. Levy and Bruns obtained tetanus bacilli from eight out of thirteen samples of gelatin examined. It was formerly believed that the spores of the tetanus bacillus are killed by an exposure during eight minutes to streaming steam at 100 C., but the authors quoted have shown that even after thirty minutes' exposure some tetanus spores survive, and only after thirty-three minutes were all samples of infected gelatin so exposed found absolutely free from tetanus germs. According to Forster and Brehmer larger masses of gelatin must be exposed forty minutes to a temperature of 100 C. to 120 C., and this after a preliminary warning, before all tetanus spores are killed. Many of those who have used gelatin injections have not been aware that it is necessary to so extend the period of sterilization.

In quite a number of fatal cases of tetanus following gelatin injections it was subsequently demonstrated that the gelatin used contained tetanus bacilli or spores. In other cases the sterilized gelatin left was found free from living tetanus spores. We understand now that the sterilization was insufficient, and while it may have made one part of the gelatin prepared free from tetanus spores, it left them alive in other portions.

Doerfler states that prolonged and energetic sterilization does not at all interfere with the therapeutic value of gelatin, and that if indeed sterile it is absolutely void of any danger. He concedes that the great hopes placed in gelatin injections in the treatment of aortic aneurism have not been realized, but that it has done excellent service in tubercular hemoptysis, or pulmonary hemorrhage from other causes, in intestinal, renal, vesical and uterine hemorrhages, in hemophilia and in melena neonatorum.

NATHAN STRAUS' WORK IN CHICAGO.

The philanthropist, Mr. Nathan Straus, who has made famous Straus' milk throughout New York City, has transferred his activities to Chicago, and has donated a milk pasteurization plant to the Children's Hospital Society of that city, giving its installation his own personal attention. A few such persons using their surplus wealth for the public good in this discriminating manner could materially affect the infant mortality in many of our crowded urban centers. It is to be hoped that others will follow his example, if not in this in similar lines.

THE "HERB KING" GONE WRONG.

An irregular practitioner calling himself the "herb king" was recently arrested in a California town for practicing without a license, and inaugurated a not uncommon but peculiar defense. He had a number of his patrons, or those who signed as such, many of them of the sympathetic softer sex, publish a card in the local paper saying that they had received benefit from his treatment when regular physicians had failed to relieve them, and that some of the signers owed their lives to his skill. They recommended his medicines, and alleged that his prosecution was wholly unwarranted. The sequel came a few days later, when he was again arrested and held in heavy bail for a criminal assault on one of his female patients, whether or not one of the signers or only one duped by their recommendation the record does not state. Such are the ways of the quack.

RADIUM AND CANCER.

The suggestion offered in our editorial some months ago[1] that the radium radiations would prove of value in malignant disease appears to have been realized. A cable press report from Vienna at the end of last week announced the radical cure by a series of exposures to the rays of the new metal radium of a patient 61 years of age who had long suffered from cancer of the upper lip which had finally invaded the palate and seemed hopeless of further relief. The report of the case which was under observation in Professor Gussenbauer's clinic for several years was read before a recent meeting of the Imperial Academy of Sciences at Vienna. Only a small portion of radium was employed, something less than a sixth of a grain of the bromid salt, which is the most powerful in its radio-activity of any of the salts of the metal yet prepared. The malignant growth, it is reported, gradually disappeared, and there has been a very favorable healing of the ugly sore which existed. At the same meeting a case of melanosarcoma, the form of malignant disease universally acknowledged to be the most fatal in its effects, was reported as having been cured by the same means. The physician in charge considered the prognosis of the affection so hopeless under the ordinary methods of treatment that he preferred to try the effect of the radium rays before having recourse even to simple surgical removal. The tumor completely disappeared, and there is good reason to think that the patient will escape the serious danger which always accompanies this form of malignant neoplasm, no matter how small it may be when first recognized. While authentic detailed reports of the above cases have not been received, the wonderful qualities of radium already recognized make one ready to accept the statements as facts. The great objection to the general use of the remedy is its scarcity and costliness, but, as above shown, a very minute quantity only is required. This new substance may yet play a very important part in our remedial armamentarium.

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[1] La Semaine Medicale, 1903, No. 14, p. 3.
[2] La Semaine Medicale, 1903, No. 19, p. 152.
[3] Die Therapie der Gegenwart, Berlin, 1903, p. 118.

[1] The Journal A. M. A., xxxix, p. 846.

THE SPECIFIC TREATMENT OF HAY FEVER.

The recent work by Dunbar[1] on the cause and specific treatment of hay fever is bound to excite great interest among medical men. Dunbar seems to successfully show that the pollen of a great variety of cereals and grasses—rye, oats, wheat, corn, grasses—contain substances that in susceptible individuals, but only in the susceptible, produce the well-known phenomena of hay fever. And these pollens produce hay fever, no matter how or where or when introduced. The active substance is soluble in tears, saliva, nasal secretion and blood serum. Even the hypodermic injection in susceptible persons of the starch rodlets in the pollens mentioned has caused severe conjunctivitis, coryza, cough and asthmatic seizures. These results would seem to settle the cause of hay fever, although the nature of susceptibility or unsusceptibility remains as yet wholly obscure. Dunbar, then, undertook the production of a curative serum by following the principles of immunization. Animals were injected with pollen toxin and after prolonged injections an antitoxin developed in the serum. This antibody not only rendered pollen harmless when mixed with it in the test tube, but it also neutralized the effects of the pollen when introduced into the eye or nose shortly after the local application of the pollen.

So far this neutralization has been successfully done only in the early stages of the process, but the results certainly warrant the hope that a serum may be produced which shall have more extended therapeutic value. Apparently the pollen toxin in the different grasses is the same because one pollen may be neutralized by the antitoxin obtained from the injections of pollen of a different source. This work of Dunbar's is entitled to the confidence of physicians because of the standing of the author, an American who has risen to scientific eminence and the high position of director of the Hygienic Institute at Hamburg, and also because of the evident scientific and thorough character of the work itself, which has extended over a period of seven years. Further reports will be awaited with interest.

SUNSTROKE AND HEAT EXHAUSTION.

The two conditions of sunstroke and heat exhaustion, though occurring from similar or identical causes, are not the same. In heat exhaustion the temperature is only slightly elevated, and may be subnormal, while in sunstroke it is usually well above 103 degrees. Correspondingly, the skin is comparatively relaxed and cool in heat exhaustion, while it is hot and flushed in sunstroke. Unconsciousness and convulsions are rare in heat exhaustion, but are common in sunstroke. Corresponding to the condition of the temperature, the pulse in heat exhaustion is rapid, feeble and perhaps almost imperceptible, but in sunstroke, although it is rapid, and may be feeble, it may also be full. The pulse, therefore, can not in all cases give much assistance. If further evidence is necessary to establish a diagnosis, there may be the history of the patient having complained, in heat exhaustion, of suffering from intense heat, or if he is conscious—as is usually the case—he may himself describe his previous feelings. On the other hand, in sunstroke, the attack in most cases comes on suddenly, and the patient is apparently stricken down while suffering no inconvenience. When diagnosis is made the treatment, it is easily seen, differs in the following: In heat exhaustion the subnormal temperature must be raised to normal; in sunstroke the hyperpyrexia must be reduced. The patient suffering from heat exhaustion must be protected from drafts, have external heat applied and stimulants given. In sunstroke, the stronger and colder the draft, the better. The patient should be rubbed with ice, be given cold water enemas or ice packs, and other measures should be used to reduce the temperature. In sunstroke stimulants should never be given while the temperature remains high and the period of depression following the reaction has not arrived. In case of either affection the patient must be warned to resume work moderately, and only after sufficient time for convalescence. He must be further warned that he will be more liable to such attacks in the future. The pathology of the resulting condition has often been discussed, but whatever the exact injury may be, there often seems to be an irreparable lesion.

A BETTER CONDITION OF MEDICAL AFFAIRS IN HOT SPRINGS, ARKANSAS.

By an act of the Arkansas legislature last winter the jurisdiction of Hot Springs Reservation was ceded by the State of Arkansas to the United States government. One result of this is that the regulation of the practice of medicine comes under the jurisdiction of the national government. The Secretary of the Interior has promulgated a new series of rules for conducting the Hot Springs, including provisions requiring all physicians prescribing and using the hot water to be registered, and a board of physicians has been appointed to pass on their qualifications. This is independent of the Arkansas State medical practice act. The practice of public touting for certain doctors which has been so much the custom in the past is to be abolished. The payment of any sum of money or anything of value by any bathhouse keeper, manager, clerk or attendant as a compensation for drumming customers or such practice by drumming doctors is forbidden. On violation of the rule water may be shut off, or the lease canceled, as the authorities may decide. Any solicitation of patronage by registered physicians will be ground for the cancelment or revocation of their licenses. In times past Hot Springs has been a sort of reproach to the medical profession by reason of the practices there in vogue, and it would seem that now under these new auspices this reproach is likely to be removed. Reputable and qualified physicians will find no difficulty in obtaining the United States license, and disreputable ones will have to take their field of activity somewhere else. It is to be hoped that they will find few places where they can establish themselves. It is said that up to quite recently some of the local physicians there have been acting as if these rules did not affect them. They have hardly yet had time to be thoroughly effective, but we think the individuals alluded to will find that they have been playing with fire. It may be that the new rules will be attacked in the courts, but we have little fear of the outcome. The United States laws and regulations are usually fairly well supported by the United States Courts, and there are no precedents, so far as we know, especially in favor of the kind of quacks that have existed at Hot Springs in the past, or which would imply that they would receive any practical legal favor in the future. The reputable members of the medical profession at Hot Springs are rejoicing at the change.

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[1] Deutsche Med. Wochenschr., 1903, xxix, p. 149.

Medical News.

CALIFORNIA.

Bard Hospital Incorporated.—The Elizabeth Bard Memorial Hospital, Ventura, has been incorporated with a capital stock of $40,000.

The Last of the Epidemic.—The sixteenth death in the epidemic of typhoid fever at Leland Stanford University, Palo Alto, occurred June 17, and the hospital, which had been in use for two months, is now closed.

One More Plague Case.—The ninety-fifth officially recorded case of bubonic plague at San Francisco was reported June 5, and the diagnosis confirmed by autopsy on the following day. There had been no case recorded since March 17.

Personal.—Dr. and Mrs. Fisher R. Clarke, Stockton, celebrated their silver wedding anniversary, June 6.——Dr. Francis M. Bruner has been elected chairman of the Santa Ana Board of Health, and Dr. John G. Berneike, health officer.

Graduation.—The University of Southern California, Los Angeles, graduated a class of 25 from its medical department June 11. The bishop of Los Angeles, Rt. Rev. Joseph H. Johnson, delivered the address of the evening, and the president of the university conferred the degrees.

GEORGIA.

Medical Scholarships Awarded.—The governor has named four men from the state at large and two from each congressional district as beneficiary students of the Medical College of Georgia, Augusta.

Personal.—Dr. W. Sterling Wilkinson, Augusta, is said to have completed a fast of 53 days, June 28, whereby he cured a dyspepsia of many years' standing.——Dr. Herring Winship has been appointed junior surgeon at the Macon Hospital.

Addition to Faculty.—Seven lectureships have recently been established at the Medical College of Georgia, Augusta, which have been assigned as follows: Dr. William H. Goodrich, genito-urinary diseases; Dr. W. Clifton Lyle, forensic medicine and hygiene; Dr. William Z. Holliday, diseases of children; Dr. W. C. Kellogg, diseases of the skin; Dr. W. R. Houston, nervous diseases; Dr. Andrew J. Kilpatrick, minor surgery and bandaging, and Dr. Henry M. Michel, orthopedic surgery.

ILLINOIS.

New Building for State Hospital.—The contract has been let for a new building at the Illinois Western Hospital for the Insane, Watertown, to be constructed at a cost of $101,900. The new building will add 400 to the capacity of the institution, making a total capacity of 1,200.

Physician Gives Estate to College.—By the will of Dr. Hiram K. Jones, whose death occurred June 16, his entire estate, valued at about $75,000, with the exception of a few legacies to be paid therefrom, was bequeathed to Illinois College, Jacksonville, with which he was connected for many years.

Personal.—Dr. Carey Culbertson and wife, Piper City, prior to their departure for Europe, were given a reception, at which a handsome steamer rug was presented to them. Their objective point is Vienna.——Dr. Lewis C. Taylor, Springfield, has been appointed assistant surgeon-general, with the rank of lieutenant colonel, and has been assigned to the newly-organized Fourth Brigade.

Warning.—A correspondent in Lewistown, Fulton County, warns against Dr. A. A. Potter, an advertising itinerant, who has been making much money from the people of that section by advertising to cure all diseases free. He was fined $100 and costs for violation of the medical practice act, but escaped without payment of the fine. The sheriff of Fulton County would be glad to receive information as to the whereabouts of this individual.

Chicago.

Hot Weather Kills.—The week ended July 4 showed the result of the sudden onset of hot weather, as 563 deaths were recorded, an increase of 109 over the preceding week, or about 24 per cent.

Hospitals To Be Given Permits.—The corporation counsel has advised Health Commissioner Reynolds to issue licenses to general hospitals, even though neighboring property owners should object, serve written notice on the mayor and commissioner, and threaten suit for damages.

Pure Milk Plant Opened.—[illegible] plant of the Children's Hospital Society, [illegible] munificence of Mr. and Mrs. Nathan Str [illegible], was opened for the summer on July 1. The milk will be supplied at less than cost, from sixteen substations situated in the more congested centers of population of the city.

Commencements.—Jenner Medical College held its graduating exercises June 30. Dr. G. Frank Lydston delivered the doctorate address on "The Young Man's Way to Success."——Harvey Medical College graduated a class of 20 on June 27. Dr. Frederick D. Marshall presided and Carl Svante Nicanor Hallberg, Ph.G., on whom was conferred the honorary degree of Doctor of Medicine, delivered an address.

Reduced Mortality.—The forecast of the Department of Health of May 23 has been fully verified, as shown by the following figures of successive weekly death rates since that date: May 30, 16.12; June 6, 12.73; 13th, 13.06; 20th, 12.48; 27th, 12.54. For the month of June the total 2,042 recorded deaths represent an annual mortality of 13.16 per 1,000—a decrease of more than one-fifth (21.1 per cent.) from the May, 1903, rate and of 6.8 per cent. from the average June rate of the previous ten years.

Alumni Week at Northwestern.—The exercises of alumni week at Northwestern University Medical School were attended by about 200 former graduates of the institution. Special clinics were held during the week, and for the banquet which had been planned in the Auditorium Hotel, an al fresco lunch with student waiters in the Physiological Laboratory was substituted on account of the strike of the waiters. Dr. Archibald Church was toastmaster, President James of the University welcomed the guests, and Hon. A. N. Waterman, Rev. I. A. White and Frederick Greeley spoke.

IOWA.

Revenue from Itinerants.—It is reported that the state of Iowa will receive in 1903 a revenue of nearly $20,000 from medicine pedlers at $100 a license.

Back from Europe.—Dr. Will L. Hearst, Cedar Falls, has returned after a year's absence in Europe.——Dr. Aram G. Hejinian and family of Anamosa have returned after a stay of eight months in Europe.

Hospital Opened.—The formal dedication and opening of Mercy Hospital, Council Bluffs, took place June 11. The hospital has cost about $75,000, and contains 113 rooms. In its appointments and equipment it is said to be unequaled in the state.

University Changes.—The following changes in the teaching staff of the College of Medicine of the University of Iowa are announced: Dr. Lawrence W. Littig, professor of theory and practice of medicine and clinical medicine, has resigned, and Dr. Walter L. Bierring has been elected to that chair; Dr. Henry Albert has been elected assistant professor of pathology and bacteriology.

Personal.—Dr. James G. McAlpin, Grundy Center, started for Europe July 1. He expects to study in Vienna, Paris and Edinburgh for a year.——Dr. Charles B. Adams, Sac City, has been elected president of the State Board of Medical Examiners, vice Dr. John A. McKlveen, Chariton.—Dr. John W. Harriman has been elected president of the staff of the University of Iowa Hospital, Iowa City, and Dr. Lee W. Dean, secretary.

Endow Medical Journal.—The only endowed journal in the world devoted to the study of infectious diseases is to be published in Chicago. Commencing in the fall *The Journal of*

Infectious Diseases, edited by Dr. Ludvig Hektoen and Prof. Edward O. Jordan of the University of Chicago, will be issued. The expenses of the publication, which, it is estimated, will amount to $5,000 annually, will be met by Mr. and Mrs. Harold McCormick. This agreement is made for an indefinite term, and amounts practically to a $125,000 endowment.

KENTUCKY.

Damage Suit.—Dr. Cuthbert Thompson, Anchorage, recently received a verdict in his favor in a suit against him for $10,000. The suit was brought by a woman 76 years of age who had sustained a Colles fracture of the left forearm twenty-two months before.

Pioneer Physician Ill.—Dr. James M. Holloway, Louisville, is seriously ill as a result of a fall two weeks ago. It was at first thought that his skull was fractured, but it afterward proved that he had concussion of the brain. His advanced age, of course, makes his condition more serious.

Medical College Incorporated.—The Kentucky University Medical Department was recently incorporated with a capital stock of $45,000, by Drs. Joseph B. Marvin, Thomas C. Evans, James M. Holloway, J. Garland Sherrill, Samuel E. Woody, Henry E. Tuley, Louis Frank, Leon L. Solomon, and W. Ed Grant.

To Make Entrance Examinations More Rigid.—The Kentucky State Board of Health, at its June 10 meeting, passed the following preamble and resolutions:

> Whereas, In violation of published requirements, many low-grade schools offer private inducements to medical students for admission, reduced time of attendance on lectures, scholarships and reduction of fees, to induce them to enter on the study of medicine to their own disadvantage, and contrary to the interests of humanity; be it
>
> *Resolved*, That the State Board of Health of Kentucky will not recognize as reputable any medical college which violates its published requirements for admission, tuition and the time of attendance at the annual sessions, which requirements must be definitely expressed. The college shall require of each applicant for matriculation evidence of good moral character and a certain showing that he is a graduate of a recognized normal school, high school, academy or college of literature, science or arts, or a certificate from a county superintendent of public instruction showing that he has passed a satisfactory examination in the following branches: In English, composition, submitting a composition on some subject of general interest embracing not less than two hundred words, which shall be considered with reference to spelling, punctuation, thought and construction; in arithmetic, showing knowledge of decimal fractions, percentage and compound numbers; in algebra, simple equations; in Latin, first year of one ordinary Latin course; in physics, the elements of mechanics, hydrostatics, hydraulics, heat, optics and acoustics; or, in default of such certificate, he shall be examined in the above-named subjects by the superintendent of schools in the city in which the college is located and obtain and present his certificate.
>
> No college shall offer or accept scholarships, or any reduction in fees, except as provided for and required under state laws, or under the laws of endowed universities.
>
> No note accepted by any college in payment or part payment of fees, or any form of rebates will be recognized as complying with the above requirements, and no student shall be given credit for attendance on lectures, or for examination for advanced standing until all fees shall have been paid, nor shall the degree be conferred on anyone under other conditions.
>
> Each student must have been in actual attendance for the full term in each of the four years required in the curriculum.
>
> Each applicant graduating on and after July 15, 1903, shall make affidavit of compliance with the above requirements for each and every year after July 15, 1903.

MARYLAND.

Hot Weather Deaths.—The hot weather in Baltimore sent the deaths last week up to 262, 50 being of children under 5. The annual proportion was 24.68 per 1,000.

Medical Journal Declares Dividend.—The shareholders of the Maryland Medical Journal Company of Baltimore and Washington, at its annual meeting, June 19, declared a dividend and re-elected the old board of directors.

Bequests to Hospitals.—Minka Friedmann left by his will $500 to the Hebrew Hospital, and John Uhrig left $100 to the same institution.——Katharine Gibson by will left $1,000 to the University of Maryland Hospital toward the endowment of a bed in that institution.

Personal.—Dr. James A. Stevens, Oxford, has been elected state medical examiner by the Medical and Chirurgical Faculty of Maryland, vice Dr. Charles F. Davidson, Easton, who declined re-election.——Drs. A. D. McConachie, Frank D. Sanger and John Ruhräh, Baltimore, have sailed for Europe.——Dr. J. C. King, Salt Lake City, Utah, sailed from Baltimore for Bremen July 1, and Dr. W. J. Craigen, Cumberland, for Jamaica, on the same date.——Dr. William T. Howard has gone to the White Sulphur Springs, Va., for August, and will spend September at Narragansett Pier.

MICHIGAN.

Reported Epidemics.—Typhoid fever is reported to be epidemic at Escanaba, and diphtheria at Benton Harbor.

Michigan Falls in Line.—Michigan has adopted the American Medical Association resolutions concerning the examination of the eyes and ears of school children.

Accident to Physician.—Dr. Frank A. Grawn, Munising, while returning home after having made a call, was thrown from his bicycle into a barbed-wire fence, sustaining serious cuts and bruises.

Personal.—Dr. Allen D. McLean, Detroit, has passed the examination for the medical department of the U. S. Navy.——Dr. Jabez Perkins, Owosso, who has been a practitioner for more than half a century, was made an honorary member of the Michigan State Medical Society at its recent meeting.——Dr. Arthur D. Holmes, Detroit, for eleven years lecturer on pediatrics in the Michigan College of Medicine, has resigned.——Dr. Theodore F. Heavenrich, Detroit, has been elected medical director of the Port Huron Hospital and Home Association to succeed Dr. Hiram R. Mills, who has moved to Grand Rapids.——Dr. Elliott K. Herdman has been elected city physician of Ann Arbor.

Would Educate the People.—At the meeting of the State Board of Health, June 10, the following resolution was unanimously adopted:

> *Resolved*, That the state board of health shall each year publish and transmit to boards of supervisors and local boards of health throughout the state the scientific and common names of diseases dangerous to the public health. Such lists shall contain the names of dangerous communicable diseases already existing in the state, or which, in the opinion of the state board of health, are liable to be present during the year following each publication. Diseases communicable from animals to man shall also be included in these lists. Accompanying the lists shall be brief statements of how each of the dangerous diseases is spread, and the proper steps to be taken for its restriction by local health boards and health officers at every outbreak of such disease.

MINNESOTA.

Newly Licensed.—Licenses were issued by the State Board of Medical Examiners, June 19, to 108 applicants who had successfully passed the examination.

Minnesota in Line.—The Minnesota State Medical Society has adopted the resolutions of the American Medical Association anent the examination of the eyes and ears of school children.

Smallpox Waxes.—The smallpox report of the State Board of Health for the week ended June 15 shows 143 new cases in the state, 55 of which were in Renville County. Only one death was reported.

Advisory Board for Consumption Sanatorium.—Governor Van Sant has appointed the following advisory board for the sanatorium for tuberculosis to be located near Walker: Drs. George B. Weiser, New Ulm; Alonzo P. Williamson, Minneapolis; James L. Camp, Brainerd; George S. Wattam, Warren, and H. Longstreet Taylor, St. Paul.

Commencements.—The College of Medicine and Surgery of the University of Minnesota graduated a class of 73 June 2. Dr. John M. Dodson, dean of the medical department of the University of Chicago, delivered the annual address on "The Relation of the University to Professional Schools, Medical and Otherwise."——The medical department of Hamline University held its graduating exercises June 1. A class of 34 received degrees, and Rev. Irving R. Johnson delivered the doctorate address.

MISSOURI.

Medical College Expands.—Barnes Medical College, St. Louis, has established pharmaceutical and dental departments.

Leaves Large Estate.—The will of the late Dr. Andrew L. Chapman, Kansas City, devises an estate valued at $260,000.

Resolutions Regarding Dr. Bryson.—The St. Louis Medical Society of Missouri, at a meeting held soon after the death of Dr. John P. Bryson, adopted resolutions eulogizing the character and attainments of its deceased member, and detailing his work as a physician, teacher and writer.

Hospital Appointments.—The health commissioner of St. Louis has appointed Dr. William J. Doyle assistant to the superintendent of the City Hospital, and Dr. C. P. Glahn senior assistant.——Dr. H. J. Sherk has been appointed chief dispensary physician by Health Commissioner Simon of St. Louis.

Many Graduate.—Barnes Medical College, St. Louis, graduated a class of 100; Marion-Sims-Beaumont Medical College, 96, and the St. Louis College of Physicians and Surgeons, 59;

University Medical College, Kansas City, conferred degrees on a class of 63, and Kansas City Medical College graduated a class of 24.

NEW YORK.

New York City.

Physician Beaten and Robbed.—Dr. Benjamin Hawker, a retired physician, was assaulted and badly beaten by two burglars in his house, 141 East 52d street.

Illegal Practitioner Fined.—Charles Sampsell, practicing as "Dr. E. D. Porter," was recently arrested on the charge of practicing medicine without a license, and was fined $50.

Personal.—Dr. William T. Bull sailed for Europe, June 27. ——Dr. Frank Hinkley, Brooklyn, has been appointed junior physician at the Manhattan State Hospital.——Dr. Luther Halsey Gulick, the director of physical training in the public schools of this city, has been elected president of the American Physical Education Association.

Charity Curtailed.—The well-known work of the floating hospital of St. John's Guild must be curtailed this summer because of lack of funds. The first trip of the floating hospital was made on July 7, but the service to Brooklyn will be entirely discontinued this year, and there will be an alternate service to the east and west sides of New York only.

Steals Doctor's Horse.—A blacksmith went to the stable where Dr. Guilford Allen keeps his horse, and succeeded in getting permission to take the animal out on the plea that he had been sent by the doctor to exercise it. He then took the horse to several stables, trying to effect a sale. He was arrested by a police captain while thus engaged.

Epidemics on Staten Island.—Measles and whooping cough are raging on Staten Island, or Richmond Borough. In one public school at Westerleigh as many as 75 per cent. of the pupils were ill with measles. The epidemic of whooping cough began at Tottenville about two weeks ago, and is spreading with such great rapidity that it is already to be found in almost every family in that place.

Woman an Ambulance Surgeon.—Considerable popular interest has been aroused by the fact that New York's first woman ambulance surgeon has begun active service. For the past six months Dr. Emily Dunning, a New Yorker, has been busy as a junior surgeon in the accident ward of Gouverneur Hospital, and on July 1 her service as ambulance surgeon began. With the exception of a "rainy day" skirt and the regulation ambulance surgeon cap she dresses as do other women, and seems to experience no special difficulty in attending to the arduous duties of her office.

Health Board and Sick Babies.—The health department announces its intention of inaugurating at once a crusade among the 50,000 babies born in the city in the past year. A corps of 43 physicians and 17 nurses will engage in this work, to facilitate which the city has been divided into 160 districts. The mothers are to be taught how to care for and feed their babies, and the nurses will assist in carrying out the directions of the physicians. No doubt the work will be pushed vigorously, but it seems hard to credit the published statement that this fostering is to be given indiscriminately to both rich and poor.

GENERAL.

No Room for Kokuas.—The Honolulu Board of Health at its meeting, June 17, decided that, on account of the crowded condition of the Lunalilo Home, it would be impossible to admit Kokuas from Molokai to that institution.

First American Plague Victim.—Mr. Frank Twombley, an American contractor of Manila, died on April 24 from bubonic plague. The diagnosis was confirmed by Major Edward Champe Carter, surgeon, U. S. Army, Commissioner of Public Health.

No Physicians for Postoffices.—Postmaster General Payne issued an order abolishing the position of physician in postoffices at the close of business June 30. The postoffices employing physicians are New York, Chicago, Brooklyn, Philadelphia, and Boston.

Jaro Hospital Completed.—Advices from Iloilo, P. I., under date of May 20, state that at that time the new hospital at Jaro was almost completed, and that several wards were already occupied. Drs. H. E. Winslow and L F. Raymond are in charge.

Physicians in Porto Rico.—In a letter from Dr. Wm. Fawcett Smith, secretary of the Superior Board of Health of Porto Rico, he says that it will be a kindness to prevent any physician from coming to Porto Rico under the existing conditions, and suggests that the publication of this notice may save serious loss and disappointment to physicians who had intended to settle in the island.

A Warning and a Request.—The Medicolegal Department of the Chicago Medical Society desires us to announce that a man who claims to be Dr. Theo. Jennings robbed the office of Dr. Dickey of Toledo, Ohio, last week. On Saturday evening Dr. Byron Robinson of Chicago cashed a check for him to which he had forged the name of Dr. Dickey. He is probably addicted to cocain. He is about five feet eight inches in height, about forty years old, is disheveled in appearance and very nervous in manner. Any physician knowing anything about him is asked to notify the Chicago detective department, or Dr. W. A. Evans, 103 State Street, Chicago.

Dr. Howard A. Kelly Abroad.—Dr. Kelly seems to be making an impression abroad judging by the notices in our exchanges. We quote from the *British Medical Journal* in regard to his visit to Glasgow: "The arrangements for the visit of Dr. Howard A. Kelly to Glasgow last week were carried through with great success. Dr. Kelly had been elected honorary president of the Glasgow Obstetrical and Gynecological Society, and in the Faculty Hall on the evening of June 17 he delivered his presidential address before a crowded audience of professional men and women. The subject was 'The History of Appendicitis in Great Britain,' and Dr. Kelly traced the development of our knowledge of appendicitis as a separate disease and its surgical treatment from the beginning of the nineteenth century, pointing out the important part Britain had played in that development. The address was interesting and racy, and was evidently meant as a compliment to British physicians and surgeons. Needless to say, it was enthusiastically received. On the afternoon of June 18 there was a combined meeting of the Glasgow and Edinburgh Obstetrical Societies, when a discussion took place on Extirpation of the Uterus and Its Appendages in Serious Pelvic Inflammation, Dr. Kelly introducing the discussion. In the evening of the same day Dr. Kelly was entertained at dinner in the Windsor Hotel. The president of the Glasgow society, Dr. Nigel Stark, occupied the chair and there was a large gathering, which included the leading members of the profession in both Glasgow and Edinburgh. In proposing 'The Health of Dr. Howard Kelly' the chairman paid a high tribute to his distinguished services to surgery, eulogizing the improvements he had inaugurated which had made his name famous all over the world. Dr. Kelly, in reply, thanked the Glasgow society for the great honor it had paid him by electing him its honorary president, and dwelt on the cordiality of the relationship that exists between Britain and the United States."

Referring to the address he delivered in French at Paris, before the Société de Chirurgie, the *Gazette Méd. de Paris* remarks: "Professor Kelly operates in the most splendid hospital in the world, in a marvelous university, and he possesses a private library almost as rich as that of the Institut de Bibliographie at Paris, while he is devoted to bibliography. His coming to Paris to address his French confrères in their own tongue on the Rôle of France in the History of Appendicitis, is a tour de force that very few members of the French society could return in kind, for very few know English, and still fewer are posted in regard to American bibliography."

The editorial concludes: "Certes, c'est là de la coquetterie, but it is piquant to see an American, the type of the active, practical man, disport among the old dusty tomes of the eighteenth century and the forgotten files of the first scientific periodicals, as much at home as a Roosevelt on the tops of the Rocky Mountains! There is no doubt about it, the future belongs to the United States. The Latins are dead, and Panama will give them the finishing stroke."

FOREIGN.

La Syphilis.—A new monthly has been founded at Paris with the above descriptive title. Dr. T. Barthélemy, 22 rue de Notre-Dame-de-Lorette, is to have editorial charge.

Sanatorium for the Madeira Islands.—The *Riforma Medica* states that Prince Carl von Hohenlohe has applied to the Portuguese government for permission to erect two extensive sanatoria on the Madeira islands. He agrees to construct two and have them ready in two years, one for the wealthy and one for the poor.

Sequel of the Larceny Case Against a Paris Physician.—Sentence has been suspended in the case of the young Paris physician who was condemned to six months' imprisonment on account of petty larceny to keep himself from starving. A small town in the interior needed a physician, and he has removed there on the recommendation of other physicians, who know that he had done good work, as his thesis testified.

A Second Victim of the Laboratory Plague at Berlin.—All the persons who attended Dr. Milan Sachs during his illness were treated with preventive injections of antiplague serum, but one of them developed the disease. Possibly on account of the preventive injections, it had a very mild course and recovery was soon complete. The entire furnishings of the apartment where Dr. Sachs had lodged were taken to the disinfecting headquarters and burnt.

The Correspondent of the Paris "Semaine Medicale" Caught in the Kansas Floods.—In passing through Kansas City, June 3, Dr. Münch was stopped by the floods and was obliged to abandon his baggage containing all his memoranda and escape to the bluffs, as he writes. His letters are, therefore, suspended for the present. They have proved an interesting series of sketches, showing that we really gain in our own estimation when we see ourselves in certain respects as others see us.

Honors to the Late Professor Bottini.—The friends and pupils of the recently deceased Professor E. Bottini had planned a Festschrift in his honor with a gold medal and souvenir copy of his diploma on the occasion of his jubilee anniversary. The anniversary came soon after his death, and the University of Pavia was made the recipient of the honors in his name, the medal, diploma and Festschrift to be duly preserved among the archives of the institution with the list of subscribers.

Autoinoculation with Bovine Tuberculosis by Dr. Garnault of Paris.—Dr. Garnault's experiments on himself to refute Koch's assertions in regard to the non-identity of human and bovine tuberculosis, have resulted negatively, as we have previously reported. No general infection has followed and the local tubercles on the arm soon healed. No tubercle bacilli nor caseous tissue were found in them. Garnault is an athlete and possibly the experiments might have resulted differently on a less perfect physique, but as it is, our German exchanges either ignore his experience altogether or refer to it as resulting in a confirmation of Koch's statements, instead of a refutation.

Ankylostomiasis in the Westphalia Mines.—The *Allg. Med. Ct. Ztg.* states that it is reported from Bochum that a new source of infection has been recently discovered there. The parasites were found in large numbers in the eggs of hens which had access to fields fertilized with miners' dejecta. All the members of the scavenger's family, who were in the habit of eating eggs raw, were found to have the disease. The hens showed no symptoms of it, but investigation of the eggs revealed the larvæ in profusion. Our exchange adds that the case requires scientific confirmation, but states that according to the latest figures there are fully 25,000 cases of the disease in the Westphalia mines.

Death of Professor Gussenbauer.—Dr. Karl Gussenbauer, the eminent surgeon of Vienna, "Hofrath" and president of the University, died June 19, aged 61, after a brief illness due to a heart affection. He was the son of a country physician at Ober Vellach and was assistant to Billroth after graduating from the Vienna medical school. He became docent in 1874, and the year after was called to Liège as professor of surgery, and two years later to Prague, whence he was summoned to Vienna in 1894 as the successor to Billroth. The week before his death he went to Vöslau, accompanied by the dean of the medical faculty, to present the renewed medical diploma after fifty years to Professor Drasche on his silver jubilee.

Leprosy in the Danish West Indies.—Professor Ehlers was commissioned by the Danish government to study the conditions in regard to leprosy in the three Danish West Indies, St. Thomas, St. Croix and St. Jean. He has just handed in his report, which states that he found 102 cases of leprosy on the islands, and that the number is less than formerly. At the same time he proclaims that there are no adequate provisions, and that more stringent regulations are necessary to prevent immigration of lepers. He also pleads for the erection of a suitable leper asylum. He found the disease of a milder character than in more northern countries and states his opinion that this form is curable by proper treatment and care.

Declining Death Rate in Europe.—The German Bulletin of Vital Statistics states that the death rate in the German Empire has fallen from 26.8 per 1,000 during the decade 1841-1850, to 22.2 in the last decade. For comparison it gives the death rate for the same decades in other European countries: In Austria it has fallen from 32.8 to 26.6; France, 23.3 to 21.5; England and Wales, 22.4 to 18.2; Belgium, 24.4 to 19.1; Denmark, 20.4 to 17.4; Sweden, 20.6 to 16.3, and in Norway from 18.2 to 16.2. During the last decade the death rate in Switzerland was 19.4; in Italy, 24.7; in Hungary, 29.7 and in European Russia, 33.5. The *Deutsche Med. Wochft.* comments that the death rate is, therefore, highest in Hungary and Russia, but the birth rate in these countries is exceptionally high.

The Bufalini Prize.—The R. Istituto di Studj superiori at Florence, Italy, notifies us that the Bufalini prize of $1,200 is open to competition again. It is awarded every twentieth year, and all competing articles must be received by the chancellor of the medical department, Via degli Alfani, 33, before the end of October, 1904. They must be sealed and written in Italian. The theme is the value of the experimental method in opposition to the speculative or dogmatic method of scientific research. The first part of the article should deal with the subject at large, and in the second part the author must review the way in which the single sciences have followed this method during the last twenty years, and how they can be induced to a more faithful and complete observation of its principles. The prize may be divided, and the writer may limit his article to one of the parts alone.

Longest Survival in Accidents.—The Tarbé case is attracting much interest at Paris. This wealthy couple were found asphyxiated by carbonic oxid one morning from a defective flue. Brouardel and Ogier testified as medicolegal experts that it was impossible for them to determine positively which of the victims had succumbed first, but that the probabilities were in favor of the assumption that the husband had survived longest, as his cadaver was not so pale nor so cold as that of the wife. The spectators unanimously applied their efforts to resuscitate him, leaving the wife as past all aid. Lacassagne of Lyons, on the other hand, affirms that the medical presumption is in favor of the survival of the wife, citing among other reasons that the carbonic oxid might have been able to maintain the warmth and the coloring in the cadaver most profoundly intoxicated. The decision of the court has not yet been rendered.

The Question of Languages at International Congresses.—Professor Küster of Marburg is indignant because some of his compatriots at the Madrid Congress delivered their addresses in French or some other language, thus belying their national tongue. Professor Holländer of Berlin takes issue with him and thinks that some concession is necessary or the orator will find himself talking to empty benches, to say nothing of the courtesy of conciliating the members of other nationalities. He suggests in a letter to the *Deutsche Med. Wochft.*, as perhaps the best plan, that the communications should be made in the mother tongue of the speaker, followed by a brief summary in the language of the country where the congress is held. If this were adopted as a regular measure. he believes that it would prevent the choice of meeting places where Portuguese or a similar little known language is spoken. He remarks in parenthesis that as China and Japan have drawn their science so extensively from Germany, the German language would be understood at a scientific gathering there, and might thus be considered the home tongue of the national members.

Deaths Abroad.—Dr. R. Juergens, custodian of the Pathologic Institute at Berlin, died June 14, aged 60. For thirty years he was Virchow's trusted assistant and had received the titles of docent and professor, his work being principally in the line of the post-graduate or vacation courses. His contributions to pathologic anatomy are numerous, among them a new reaction for amyloid degeneration.——The death is also reported of Dr. Karl Gegenbauer, formerly professor of anatomy at Heidelberg. His seventieth birthday was celebrated with much ceremony by his friends seven years ago, when his works on comparative anatomy were scheduled in full. ——From Paris is announced the death of Dr. Gerard Marchant, following close upon that of Dreyfus-Brisac and of Boilly, all eminent surgeons in the prime of life. Marchant was born at Toulouse in 1850 of a medical family; during his interne service he suffered from diphtheria, and later from appendicitis, one leaving paralysis for a year and the other requiring months of convalescence. The surgical service at the Boucicault hospital in his charge was a model in every respect, and from it have issued numerous memoirs on surgical subjects from his pen or those of his pupils. His latest works were on "Recto-coccy-pexie" and "Hépato-pexie."

Warning Against Quacks in Germany.—The authorities of Berlin and its province are publishing the following circular of warning for the public, drawn up by a committee appointed by the Berlin Medical Chamber. "While physicians thoroughly trained and approved by the state disdain to advertise their services, there are numbers of other persons who have no training or special knowledge who yet seek to delude the suffering public by advertising in the papers or distributing circulars or by worthless books in the hands of agents, assuming false titles, making baseless promises and publishing forged or bought or fraudulent testimonials. The immense sums paid out for this advertising demonstrate the large profits that are made out of this business. During the eight years ending 1897 there were 177 criminal suits against these charlatans on account of severe injury or death from their practices, and the total resulting imprisonment amounted to 63 years, 3 months and one day. The legislature assumes that the public is enlightened enough to protect itself against such swindling speculation on the credulity of the sick. The public should apply the ordinary prudence customary in business transactions to matters affecting health and even life itself! The title of physician alone guarantees that the bearer has been found fully qualified by the state. All other titles should be regarded with mistrust. All published testimonials should likewise be mistrusted unless the person signing the testimonial is personally known and personal inquiry has been made."

Organization of the Rising Generation of Medical Men in Austria.—The medical profession in Austria is not well organized and the attempt to hold a general meeting this spring to discuss economic questions failed principally on account of race jealousies and prejudices. The rising generation, however, appreciates the necessity for organization and the benefits that may accrue from it. The medical students and internes throughout Hungary and Austria had certain grievances and wished for improved facilities and opportunities. After due deliberation they held a large representative and harmonious meeting at Vienna, June 7 to 10, which was marked by moderation and business-like methods. A number of physicians and professors took part in the proceedings, and the president of the Vienna Medical Chamber, Dr. Heim, remarked in greeting the congress, that the fact that the medical students had aimed at comprehensive organization had caused the medical profession at large great satisfaction and aroused sincere rejoicings and profound sympathy, "but at the same time," he continued, "we can not repress a sentiment of sorrow when we see that the years of student life which used to be so free from care and responsibility, are now filled with concern to better the material conditions of the coming years. It is a struggle for existence of the bitterest kind for which the medical student is preparing, and it must find young and old firmly united in order that the aims sought may be realized." This "Mediziner-Congress" has evidently made a great impression, both on the authorities and on the general public. The resolutions adopted asked for numerous reforms, some of them still unrealized in any country, but the majority merely correspond to the measures in vogue in other lands. The minister of public instruction in an unofficial interview stated that he would appoint a committee of experts to consider the resolutions when they were formally presented, and would strive in every way to comply with the demands of the congress.

Campaign Against Charlatans in Germany.—The German imperial government has notified the various state authorities that more energetic measures must be taken against quacks. The official circular states that the number of charlatans has enormously increased during the last decades, and quack practices have assumed such proportions as to become a serious menace to the public welfare, equally detrimental to the interests of the public and to those of the medical profession. The circular reviews the various measures that have been enforced in Prussia, registration of unqualified, so-called healers, the prohibition of extravagant promises to cure and prosecution of charlatans for illegal practices, and remarks that these measures have not proved an effectual check. Consequently, it is proposed, in the interests of the public, to confer further powers on the local authorities to enable them to put an end to such practices in future, at least in the cases in which the charlatans have already done injury to the life or health of the patients who have applied to them, and in those cases in which from the antecedents of the charlatan or his personality, attempts to fleece the public may be feared. In such cases the local authorities are empowered to prohibit the quack from practicing further. The law against fraud in business is to be extended to cover illegal practice of the healing art. The official circular is quoted in full in all our German exchanges as an important advance in the campaign against charlatans which the medical profession has been waging. A cable report states that these professed curers will be given a month to secure other employment, after which time they will be prosecuted if they persist in practice. One newspaper correspondent cables that the government is in possession of statistics which show that more than 100,000 men and women are illegally practicing medicine and the art of healing in Germany, and that this number is rapidly increasing. One medical statistician says he has found 150 cases of cancer in his province. Of these 25 are attended by authorized physicians and 108 by quacks. He maintains it is nearly as bad in other diseases which particularly call for trained medical aid. Most of these quacks allege that they have occult powers, personal magnetism, "magnetic eyes and hands," and that a cure will be the immediate consequence of implicit reliance on this treatment. In some of the large cities of Saxony, Dresden, Leipsic and Chemnitz, it is not unusual for an ignorant quack to receive from $1,500 to $2,000 a year, an income beyond the average earnings of the scientifically equipped medical man throughout Germany. Attention is also directed to the number of women quacks who profess to have magnetic powers. In Saxony alone there are several hundred, and among their patients are some of the proudest names in the land.

LONDON LETTER.

The Investigation of Tropical Diseases.

A parliamentary report containing "papers relating to the investigation of malaria and other tropical diseases and the establishment of schools of tropical medicine" has been issued. It opens with a circular dispatch addressed by Mr. Chamberlain, the colonial secretary, to the governors of all British Colonies on May 28, in which the progress of malaria investigation and of the training of medical officers in the treatment and prevention of tropical diseases, is reviewed. Mr. Chamberlain says that the great mortality among Europeans in climates like those of the West African Colonies and Protectorates had attracted his notice from the first, and toward the end of 1897, largely through the interest taken in the matter by Dr. Manson, medical adviser of the Colonial Office, his attention was more definitely drawn to the importance of scientific inquiry into the causes of malaria, and of making provision for educating the medical officers of crown colonies in tropical medicine. In pursuance of the second of these objects it seemed advisable (1) that a special training school in tropical medicine should be established; (2) that the leading British medical schools should be induced to give greater prominence in their schemes of study to tropical medicine; (3) that the periodical medical report sent in from the tropical colonies and protectorates should be recast on one uniform type, designed to throw light on the prevailing tropical diseases. In February 1898, negotiations were opened by the Colonial Office with the Seamen's Hospital Society, with a view to obtaining accommodation for the proposed tropical school in their branch hospital at the Albert Docks. The school was opened, November, 1899, provision being forthwith made for the training of colonial medical officers, either there or in a similar excellently equipped school at Liverpool, which had been established shortly before. So far the school has just paid its way, and much valuable teaching work has been done. But increased accommodation, both for research and residential purposes, is greatly needed, and Mr. Chamberlain anticipates that a sum of $60,000 will be required to cover the cost of the new buildings. In July, 1898, Mr. Chamberlain invited the co-operation of the Royal Society in equipping a scientific investigation on the spot into tropical diseases, particularly in such deadly forms as the malarial and blackwater fevers prevalent on the West African coast. A joint committee was appointed, and the experts selected for the work—Dr. Daniels of British Guiana, Dr. Stephens, and Dr. Christophers of University College, Liverpool—began their investigations. On the West Coast of Africa they studied the distribution and natural history of several species of anopheles. They made the most important discovery (made independently at the same time by Koch) that while the native adults are immune to malaria the disease is prevalent in native children. They showed that the native is a prime agent in the infection of Europeans, and that the segregation of the white man from the native is important. They proceeded to India, where they found that the native children also harbor, but to a less extent, malarial parasites. They showed that the percentage of native children infected may be taken as the index of the prevalence of malaria in the district and that there is a connection between this index and the presence or nearness of the breeding places of the offending anopheles. Blackwater fever, their observations have led them to conclude, is essentially of malarial origin. Though with the onset of an attack the organisms disappear from the blood they leave distinctive traces in the corpuscles. The occurrence of blackwater fever coincides with high malarial endemicity.

Fatal Tracheal Compression by Enlarged Thyroid in the New-Born.

At the Edinburgh Obstetrical Society Dr. Angus Macdonald described a case of this rare condition. An infant was born at eight months, ten minutes before the accoucheur arrived. He found the child in advanced asphyxia, but after performing artificial respiration the breathing was partly established. The thyroid was enlarged, its lateral lobes being of the size of a marble and of firm consistence. The breathing became more labored, the lower limbs being drawn in with each inspiration, and four hours after birth tracheotomy was performed, but death occurred during the operation. The thyroid was covered with a network of congested veins, and the lobes seemed to swell as the body was more cyanosed. Sir J. Y. Simpson has recorded the case of an infant who died eight hours after birth from pressure of a goiter as large as a hen's egg, which caused a forehead presentation. In 1855 Kieller recorded a case in which a large irregularly lobulated swelling in the region of the thyroid gland gave trouble by causing a forehead presentation. A. R. Simpson recorded in 1866 a case in which an enlarged thyroid caused dyspnea and dysphagia, but at the age or 4 years it was shrunken, and the child appeared healthy. In Dr. Macdonald's case neither parent suffered from thyroid enlargement.

Chorion Epithelioma.

At the Obstetrical Society Dr. Teacher (Glasgow) read an important paper on chorion epithelioma and the occurrence of chorion epitheliomatous and hydatidiform mole-like structures in teratomata. With the aid of drawings and photographs of microscopic preparations he discussed and illustrated the nature and origin of chorion epithelioma and its relations to the placenta, hydatidiform mole and certain tumors which were not related to pregnancy, but showed the same histologic characters. His conclusions were as follows: (1) The so-called deciduoma malignum arises in connection with pregnancy from the chorionic epithelium (or its forerunner the trophoblast) which is of fetal epiblastic origin. (2) These tumors form a characteristic group clinically, pathologically and developmentally, and should be classed neither as sarcomata or carcinomata, but as a distinct group *sui generis*. The most appropriate name is chorion epithelioma. Malignant hydatidiform mole may be treated as a variety of the disease. (3) Tumors containing precisely similar structures as those that develop from pregnancy may occur in other parts than the uterus and in both sexes. Probably they are teratomata arising from some structure with the morphological value of an included ovum and the chorion-epitheliomatous tissues represent the actual trophoblast of the included ovum.

Correspondence.

A Year's Experience in Organization in Michigan.

Detroit, Mich., June 20, 1903.

To the Editor:—It is characteristic of the American to demand the test of experience ere accepting the dicta of science. Medical sociology affirms certain propositions relative to medical organization, but their acceptance is delayed for lack of experimental proof. As a contribution to this proof is the experience of Michigan during the past year. This experience began with the annual meeting, June, 1902, at Port Huron. Then, as a result of an exhaustive study of the situation, past, present and future, the Michigan State Medical Society unanimously adopted a new constitution and by-laws, in accord with modern methods. Officers were elected to carry out the details of the change. Some of the results may be catalogued thus:

The meeting of 1902 adjourned with a paid-up membership of about five hundred; eleven months later with seventeen hundred and twelve. June, 1902, it had no branches and scarcely half a dozen live county societies; June, 1903, it had fifty-eight branches, including seventy-eight out of eighty-three counties in the entire state; June, 1902, it had a cash balance of six hundred dollars; June, 1903, it had a balance of above one thousand dollars; June, 1902, forces of repulsion dominated the profession in Michigan; June, 1903, forces of attraction were everywhere in ascendancy; June, 1902, the study of scientific methods of organization awoke the hope that the Michigan profession might assume a place of beneficent influence worthy of the great state of which it was a part; June, 1903, found every member proud of past achievement in a work remarkable for its rapidity and thoroughness. June, 1902, two hundred and fourteen members were present at the meeting; June, 1903, this number had increased to five hundred and sixty-two. June, 1902, much time was consumed, and annoyance experienced, by the necessity of applicants for admission being passed on by a committee; June, 1903, all members on the list of the branches were at once given a membership badge—a minute only being consumed and no irritation. In June, 1902, the society did all its business in general session; June, 1903, the business was divided thus: the council looked after finance, publication, organization, and judicial matters; the house of delegates dealt with all legislative matters, and elected all officers, except president, decided on the next place of meeting, etc., while the immense general body elected the president, listened to addresses, engaged in scientific work and social fellowship. The confusion and turmoil of former years was abandoned in favor of a system which accomplished the objects of the meeting, in a manner perfectly equitable to every branch, after the fashion of a scientific organization. Naught occurred to darken the face, or disturb the heart of any member—*per contra* smiles and good cheer brightened the assemblage all the days. In June, 1902, doubt and anxiety prevailed; June, 1903, evident results filled all with hope for the future. Experience had proved the Michigan organization a success.

Previous observations rendered it improbable that officers could be found who would give of their time, energy, thought, money and sacrifice of private business with liberality adequate for the needs of the situation, but Michigan's experience shows that a president, vice-presidents, twelve councilors, with a secretary and treasurer, were found who failed not when the work was before them. As the society had no funds to pay their expenses, they individually met them, beyond the stipend of twenty-five dollars each to the councilors, nothing to president or vice-presidents, and naught extra to secretary or treasurer.

Not only did each councilor do his own work, but freely responded to the calls of brother councilors. The president always went wherever asked, as did the secretary, both rendering invaluable service. Thus Michigan had a corps of self-sacrificing men in the field from start to finish—so may any other state.

Most essential in this work is personal teaching—one who has learned and believed in organization carried it to those who had not learned or did not believe. The short cut of circular or journal article will fail either to organize or maintain such societies. To not a few was it a revelation to observe so many men, without hope of personal gain, toiling through Michigan, during an entire year, in organizing branches to the state society—but the fact gained hosts of adherents.

In general the officers were directed to do two things: (1) to make the society as valuable as possible, and (2) carry a knowledge of this to every physician in Michigan, with such persuasive power as to induce him to become an active member of his branch of the state society. To the utmost limit were they to make it more profitable and pleasant for each doctor to be in than outside the society. Actual results measure their extraordinary success.

It must not be supposed that no difficulties disturbed the work of organization, but in every case a fair hearing and full comprehension of the proposition won adherents. So universal was this experience of the councilors that they are sanguine of similar success in the future.

Most wholesome was the lesson to individuals, that unless members of a branch they could have no part in the meetings of other branches in the state society or the American Medical Association. To gain these relations not a few joined their branch society. To be thus supported by the larger bodies has been a pillar of strength to the branches.

The leaders in Michigan organization well understand their work has only begun; that physicians must be persuaded to work in their local branches, and those already therein encouraged to work out their own development, that of their branch, and the state society. The officers of the branches have this work primarily in charge. If they fail it is for the councilor, by such means as seem wisest in each case, to awaken interest and stimulate effort. In fact, one great problem before the councilor is to find the best method of securing and keeping the highest activity of the branches.

Should the councilor fail, his vice-president steps in to awaken him to duty. If he too fails, the president exercises his natural prerogative and stirs each to the desired activity. In Michigan it is expected that the president shall personally visit as many of the branches as possible, make a speech, read a paper, or hold a clinic, and in general use his office to increase the activity of the branches. Our late president set the pace for his successors in this direction.

Experience taught the councilor, when striving to organize or vivify a branch, that success followed a diversion from local quarrels and disputes to broader and larger questions affecting state or national interests. Fired with a larger thought, personal interests quietly dropped into their natural relationships. By such a method the writer has often seen a discordant group transformed, within an hour, into a smiling band of co-workers, ready to do and dare for the larger idea, that which its success demanded. In fact, the largest returns from organization spring directly from this law—as the organizers go out of themselves to help others their true selves come into view—selves that make for all that is best in the profession, in manhood and citizenship.

The council's report showed that last September it started a journal, under the management of the secretary-editor, which had succeeded beyond expectations, in awakening and continuing interest among the branches, and its future looks very promising. The same report showed that experience was teaching the council how to secure increasingly large returns from the funds at its disposal, and how to adjust the difficulties between individuals or branches for the common good.

Intelligent work, persistent and helpful to every physician in the state, is the secret of such success as has obtained in Michigan. To this end most of the officers of last year were re-elected, and the outcome demonstrates the wisdom of the act. The fundamental platform of modern organization is the selection of officers for their known fitness and ability, to serve, not as figureheads or little gods.

The power of seventeen hundred united physicians in Michigan, as compared with that of five hundred discordant ones, has indicated itself in many ways:

(1) It has given a self-confidence to the Michigan profession heretofore unfelt in its ability to help its members, the outside profession and the people. (2) It has spoken to the legislature and secured a more respectful answer, because it had votes, and because the chances were greater, that it expressed larger truth. (3) As six hundred members gathered in Detroit at its late meeting, the laity saw a vast concourse of physicians clearly trusting each other. It reasoned that if these learned men so evidently trust each other, we may trust them, so the people as rulers of the land had a lesson that the new profession, with modern organization, is certain to develop a profession in which "he that is greatest is servant of all."

Leartus Connor, A.B., M.D.,
Chairman Council Michigan State Medical Society.

The Demise of the "Philadelphia Medical Journal."

Philadelphia, June 29, 1903.

To the Editor:—Certain inaccuracies in the statement made by the late editor-in-chief of the *Philadelphia Medical Journal*, in your issue for June 20, seem to need correction in order that the profession may be better able to point the moral which adorns this tale. I refer particularly to the words:

"Two and a half years ago the *Philadelphia Medical Journal* reached a crisis in its affairs which led to a change in editorial management. There were many prominent medical men in Philadelphia and elsewhere who were interested in keeping the journal alive; and in spite of the fact that its short career up to that time had been marked by threatening disaster (due largely to the opposing aims and temperaments of men who commanded its various departments), a determined effort was made to rehabilitate the journal and give it a new lease of life. At the same time, however, the command of its stock was allowed to remain in the hands of a few (and a very few) laymen."

It is true that the difficulty two and a half years ago was that of "opposing aims and temperaments," but these were the old division betwixt commercialism vs. ethics. It was this that culminated in the displacement of the editor by the commercial interests, in order (as was stated at the time), to install some one who might either be hoodwinked by them or who would be pliable to the demands of commercialism. The "impending disaster" was brought into existence solely as a reason to give for deposing an editor who refused to be subservient. These facts were made known to the late incumbent personally before he assumed the position of editor-in-chief, following my dismissal and the abrogation of the office of editor, and were also made known to the profession in general by a "protest" presented at the annual stockholders' meeting of the Philadelphia Medical Publishing Company, and thereafter sent to practically every physician in the United States and Canada. It will be remembered that this protest was directed chiefly against the condition outlined in the last sentence of the quotation from the communication of the late editor-in-chief—the placing of the absolute control of a medical journal in the hands of practically one stockholder, a layman.

Not a word or sign of dissent to the statements contained in that protest has ever been made, and this letter by the recent editor-in-chief is an unexpected confirmation of their absolute truth, and reveals the rapid degeneration of the journal during the two and one-half years following. The disastrous conditions which have made the *Philadelphia Medical Journal* "practically dead in the city of its birth" have developed within the past three years. They could, however, never have prevailed had not the indifferent and apparently consenting attitude of a few physicians confirmed the commercial element in a belief that "professional ethics" existed only in the mind of the deposed editor, and that the profession would believe anything they pleased to say, if it was only said often enough and loud enough. Indifferent authors would help them by contributing their articles, indifferent physicians would send in subscriptions, and a mint of money could be made out of them and out of advertisers with the aid of subservient professional helpers! When my incumbency as editor was terminated, the journal (according to report of its business manager) had close on 12,000 subscribers. That these were gained through confidence in the editorial conduct of that journal was shown by the fact that *American Medicine*, which two and a half years ago took up the spirit and aims laid down by the *Philadelphia Medical Journal*, had 12,000 subscribers in less than nine months from its inception. Having faith in the existence of professional sentiment and recognizing that, if it could build a journal like the *Philadelphia Medical Journal* was two and a half years ago, it could also maintain it, and desiring to avert the blight of commercialism from so fair a property, I made a proposition to the board of directors prior to the final act of my dismissal, offering to lease the journal from them for any period of years they should name, assuming entire editorial and business charge and guaranteeing them as rental an annual payment of 5 per cent. on the then capital stock of $60,000. Under the conditions that then existed, with one journal in Philadelphia and with a different business management, this could have been done.

The communication of the late editor-in-chief is but a continuation of the story told in my "protest," and emphasizes the warning of the dangers of commercialism in medicine as much by what it leaves unsaid as by the degrading conditions it reveals. Those in the profession and those dependent on the profession may read their lessons, the one of the evils resulting from the unfaith of commercialism, the other that ethical sentiment is growing, and that though commercial cunning may apparently prevail for a time, its portion will eventually be meted out to it.

George M. Gould.

Indian Method of Treating Measles.

Ogden, Utah, June 28, 1903.

To the Editor:—Speaking of the Indian and his improvised Turkish bath, and the observations of McClanahan and Judd, I beg to say that when I was connected with the Winnebago and Omaha agencies some years ago the Indians there improvised a Turkish bath exactly as described by Dr. Judd in The Journal of June 27. Dr. Judd queries whether the Indian would go into cold water after this hot bath if the water were available. That is exactly what they all did at the Omaha reservation. I remember an epidemic of measles in which I had little to do other than look on, for they had a Medicine Man of their own and were impatient of any interference from me or any one. The disease was confined principally to the papooses under 10 or 12 years old. They did very little till the trouble was well established, then the patient was carried into an already prepared tepee of hides, usually buffalo skins, where it was rolled in a heavy blanket and laid in a rudely-constructed cradle made of the limbs of trees. Rocks had already been heated and now water was poured over them. Prior to this, however, the Medicine Man was in evidence and I had been relegated. He first scraped the vertex of the caput with a horn or piece of glass, and when the spot was thin enough the shell of a small horn, usually that of a young buffalo, was placed thereon after the air had been exhausted, I do not remember how, something after the manner of a cupping glass. Then the Medicine Man, assisted by the gifted of the tribe, sought to exercise the evil spirit that had entered into the little victim. This was done by the beating of tom-toms and other added instruments, including the human voice, that made the succeeding days and nights ones of horror. The flaps of the tepees were pinned down tightly to the ground, and after a little the odor inside, coming from a combination of steam, hides, heat and Indian, would stop a clock. The "hospital" tepee was always pitched on the bank of a stream of water, and as these epidemics of measles always occurred in winter (I do not remember of one at any other season) the stream was therefore frozen over. While the heating was going on some were cutting a hole through the ice. At the proper time the now half-dead young Indian was brought out, his blanket removed, and he was plunged into the icy water, perspiration and all. In a few minutes he would be returned to the tepee and the process repeated. The above will seem to many almost incredible, but it is true. Another incredible thing is that the little papooses thus treated sometimes recovered.

A. S. Condon, M.D.

Protracted Anesthesia.

Amesbury, Mass., June 28, 1903.

To the Editor:—The subject embraced in the above title is one that I have *not* seen discussed in medical journals. I have no desire to act the part of the carping critic in considering modern methods of surgery; I am quite ready to acknowledge the wonderful progress made by the masters of the knife in the last forty years. To an old-time military surgeon the present results in treatment of wounds seem little less than a miracle. I have spent many hours removing maggots from suppurating stumps after operations, so that the dry antiseptic dressing seems like a page from a fairy tale.

The old-time surgeon had certain qualifications for which he should be given credit. He was a rapid operator. Prior to ether and chloroform the length of time required for an operation weighed heavily in the scale of results. Shock was rated in proportion to the length of suffering.

In the opinion of the writer the modern surgeon *is* losing sight of possible shock by too deliberate methods. In a large hospital a few days ago I saw a patient wheeled into the operating room fully anesthetized. The surgeons were preparing their hands and donning their robes with no attempt at haste. The theory was that the patient was not suffering and consequently they could take their time.

Now ether is either an advantage medically considered or a disadvantage. If it is of real decided benefit to the patient then protracted anesthesia is all right. If it is not, then this laggardly waste of time is wrong, and we are not giving our patients the best possible chance.

The writer has been under the surgeon's knife five different times with an experience varying from a few minutes to five hours' anesthesia, and from a personal standpoint is confident that the strain on the nervous system, even under ether, is no insignificant matter. Personally, I would not like to have a patient of mine lose three minutes' time under ether waiting for a surgeon.

H. G. Leslie, M.D.

Reciprocity—A Suggestion.

Selma, Ala., June 30, 1903.

To the Editor:—For some time I have noticed that you have been trying to perfect some system of reciprocity between the licensing boards of different states. The scheme which I propose, if it could be carried out, might help those who have stood an examination in one state in getting a license in another. Should a physician practicing in one state wish to move to another he might be given the choice of standing the examination of the state into which he moves or be allowed to show his examination papers of the state in which he had already practiced; if these papers conform to the standard of the state into which he moves at the time of the examination he to be given a license in this state.

A recent graduate might make a very fine showing before one board, but should he try an examination in another state some five or six years later, though he knew considerably more than a man fresh from college, he would not be able to make as good a percentage. This manner of getting a license in another state without standing the examination is defective in that it applies to only those who have stood a written examination before an examining board.

H. D. Furniss.

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PRESCRIBING WHISKEY.

Shreve, Ohio, June 26, 1903.

To the Editor:—Is it lawful for a physician to prescribe whiskey for a patient, then dispense the whiskey, charging the patient the retail price of the whiskey, but making no other charges, i. e., for professional services?

N. E.

Ans.—A physician who would do this would be simply a dram seller and should take out a government and local license.

Book Notice.

The Practical Application of the Roentgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois; and Eugene W. Caldwell, B.S., Director of the Edward N. Gibbs X-Ray Memorial Laboratory of the University and Bellevue Hospital Medical College, New York. Cloth. Pp. 591. With 180 Illustrations, Nearly all Clinical. Price, $4.50 net. Philadelphia: W. B. Saunders & Co. 1903.

This volume is practically two books, one being devoted to *x*-rays as a diagnostic and the other as a therapeutic agent. Part one is written by Director Caldwell of the Gibbs *X*-ray Laboratory of New York, a man thoroughly competent, through practical experience, to write on the subject assigned him. In an introductory chapter is given a brief review of the experimental work which led up to the discovery of *x*-rays, then follow a description of the apparatus used, one chaptar being devoted to the Essentials of an *X*-ray Outfit, another to *X*-ray Tubes, one to Induction Coils, Interrupters and Their Management, one each to Static Machines and Their Management, to Fluoroscopy, to Photographic Materials and Their Manipulation, and sources from which the electric current may be obtained.

The chapter on Radiography is a most important and valuable one. In it are given in detail practical suggestions for radiography, including specific directions for making radiographs of every part of the body. In the chapter on *x*-ray tubes is a description of the different tubes in use, the advantages and disadvantages of the several patterns and makes. In it are mentioned and described the tubes requisite for special work, such as for the rectum, vagina, throat, etc. Besides the ordinary drawings, this chapter is illustrated with several full-page illustrations, showing in colors the appearance of tubes under various conditions. In the chapter on Photographic Materials are considered developers and developing fixing plates, printing, etc. In the last chapter of part one will be found sensible and helpful suggestions regarding the choice of an *x*-ray outfit. In brief, part one is a concisely written description of the various appliances needed in an outfit for *x*-ray work, how to use and how to take care of them. The subject is presented in a manner sufficiently elementary to satisfy even those who have but little knowledge of electricity.

In the second part, which occupies about two-thirds of the book, is given a résumé of the literature already accumulated on *x*-rays as a therapeutic agent. In discussing the effects of *X*-rays on Tissues, the Histologic Changes Produced in Tissues by the *X*-rays, the Effects of *X*-rays on Bacteria, and the Causes of the Phenomena Observed in Tissues After Exposure to *X*-rays—the headings of the first four chapters—Pusey has reviewed and analyzed the experimental work, observations and conclusions of American and foreign workers bearing on these subjects, including, of course, his own work. In the chapter on the Technic of *X*-ray Exposures for Therapeutic Purposes, besides his own, he gives the methods of such Europeans as Kienböck, Scholtz, Oudin, and Schiff and Freund, and of such Americans as Williams and Beck. He gives in detail the technic of the application of the *x*-rays to the treatment of diseased conditions, covering all points not given in part one by Caldwell. The rest of the book is devoted to the treatment of diseased conditions under the following chapter headings: Treatment of *X*-ray Burns, Indications for the Therapeutic Use of *X*-rays, Affections of the Appendages of the Skin, Inflammatory Diseases of the Skin, Tuberculosis and Similar Diseases, Cutaneous Carcinoma, Carcinoma of the Breast and in the Thorax, Deep-seated Carcinoma, Sarcoma and Other Granulomata, the Prophylactic Use of *X*-rays After Operations for Malignant Diseases and Pseudo-leukemia and Various Other Affections. In these chapters are given in brief the results obtained by the use of the *x*-ray by others and their views as to the efficacy or otherwise of the agent in all conditions in which it has been used or for which it has been recommended. The author gives his own experience and results in detail, accompanied by reports of cases. In quoting others, the author does not hesitate to oppose the position held by them, but in doing so he gives the reasons for his opposition, and not with dogmatic statements.

The position taken by the author regarding the value of the *x*-rays as a therapeutic agent is a conservative one; while its wonderful effectiveness is recognized, its limitations are also appreciated. In considering the possibilities of *x*-ray treatment in tuberculosis of the lungs, he says: "It certainly does not hold out sufficient hopes of relief to warrant its use at the expense of residence in a bad climate, or abandonment of better tried measures." As to syphilis: "There is certainly no reason to substitute *x*-rays for the efficient method of treating these lesions that we already have." These are samples of the conservative statements that occur quite often. The book as a whole can be recommended as being one of the best and most practical thus far published on the *x*-ray as a diagnostic and therapeutic agent in that it contains a sufficiently detailed description of the apparatus used, the technic, a concise and critical review of the experience and opinions of those who have used it, and a conservative statement of its possibilities and limitations as a therapeutic agent in all conditions in which it has been used or suggested. It is a practical timely book that will be appreciated and welcomed by all who are engaged in *x*-ray work, as well as by those who are interested only indirectly.

Marriages.

George F. Toalson, M.D., to Miss Lulu Wheeler, both of Mexico, Mo., June 16.

William A. McMillan, M.D., to Miss Ellinor Graham Owen, at Baltimore, June 24.

Joseph Brady, M.D., to Miss Eugenie Brown, both of San Francisco, Cal., June 25.

John L. Chester, M.D., to Miss Kathryn E. Butler, both of Emmett, Mich., June 16.

Joseph Irwin France, M.D., to Mrs. Evalyn S. Tome, at Port Deposit, Md., June 24.

Arthur C. Johnson, M.D., Newark, Ill., to Miss May Dean of Monmouth, Ill., June 15.

Thomas Boyd Morris, M.D., Atlantic, Iowa, to Miss Esther McLean of Joliet, Ill., May 1.

Charles Roberson, M.D., Greensboro, N. C., to Miss Mabel Hill, at Danville, Va., June 17.

Floyd J. Roberts, M.D., Cando, N. D., to Miss Ruby Rutledge of Grand Forks, N. D., June 25.

Henry S. Downing, M.D., Los Angeles, Cal., to Miss Elsie Clarke of Springfield, Ill., June 23.

Henry P. Beirne, M.D., Quincy, Ill., to Miss Hildred Marie Jones of Milwaukee, Wis., June 23.

Stacy Hemenway, M.D., Klamath, Ore., to Miss Irene Chitwood of Klamath Falls, Ore., June 4.

James Coale Sappington, M.D., to Miss Claire Sappington, at Liberty, Frederick County, Md., June 24.

Granville N. Ryan, M.D., Des Moines, Iowa, to Miss Miriam Pickens of Louisville, Ky., June 10.

Philip Veile Janse, M.D., Luverne, Iowa, to Miss Margaret Belle Mason of Fort Madison, Iowa, June 23.

Torana Grothaus, M.D., to John Dulin, M.D., both of Sigourney, Iowa, at Iowa City, Iowa, June 17.

B. F. Walker, M.D., Laton, Cal., to Miss Edith Alberta Crews of Riverdale, Cal., at Fresno, Cal., June 24.

William Holmes Yeakley, M.D., Davis, W. Va., to Miss Eleanor Straith Ranson, at Staunton, Va., June 17.

William Jeffries Chewning, M.D., Fredericksburg, Va., to Miss Anne Page Meetze of Washington, D. C., June 17.

Paulett Clark, M.D., Lynchburg, Va., to Miss Fannie Yuille of Campbell County, Va., at Washington, D. C., June 16.

Deaths.

Ewing L. Thompson, M.D. New Orleans (La.) School of Medicine, 1861, of Dallas, Texas, surgeon in the Confederate service during the Civil War, died suddenly at Mineral Wells, Texas, June 17, from apoplexy, aged 62. The Dallas Medical and Surgical Association held a special meeting, June 18, to make arrangements for Dr. Thompson's funeral and to prepare resolutions of respect.

Stephen E. Robinson, M.D. Rush Medical College, Chicago, 1867, a member of the American Medical Association, ex-president of the Iowa State Medical Society; member of the International Association of Railway Surgeons, Iowa State Association of Railway Surgeons, Fayette County Medical Society, etc., died at his home in West Union, Iowa, June 7, aged 65.

Frederick A. Davis, M.D. Medical College of Alabama, Mobile, 1861, of Newport, Ky., who served throughout the Civil War as Surgeon, U. S. V., was for 16 years district physician, and for four years coroner of Campbell County, Ky., died at Shepard, Ohio, where he was under treatment for kidney disease, June 24, aged 66.

Nathaniel P. Washburn, M.D. New York University, 1891, of Stamford, Conn., who had been traveling for nearly ten years in search of health, visiting Saranac Lake, N. Y., Albuquerque, N. M., and Boulder, Colo., in his quest, died from tuberculosis, June 22, at San Antonio, Texas.

John H. Vincent, M.D. Michigan College of Medicine and Surgery, Detroit, 1902, of Red Ridge, Mich., on June 18, while responding to an urgent professional call, was thrown from his horse, sustaining a fracture of the base of the skull, from which he died two days later.

Walter F. Blunt, M.D. Galveston (Texas) Medical College, 1874, for twenty-five years state health officer, who bore a spotless record in quarantine service of Texas, died, June 24, at Lockhart, Texas, from Bright's disease, after a long illness.

Carl Schwalbe, M.D. University of Bonn, Germany, 1862, a member of the American Medical Association, a surgeon in the German service during the Franco-Prussian War, died, June 14, at his home in Los Angeles, Cal., from tuberculosis, aged 65.

Stephen J. Dunn, M.D. Baltimore Medical College, 1896, of Springfield, Mass., a member of the Hampden District and Massachusetts medical societies, died at St. Francis' Hospital, Hartford, Conn., June 27, after an illness of two months.

Edwin A. Sailor, M.D. University of Iowa, Iowa City, 1901, Clarence, Iowa, formerly assistant physician at the Clarinda State Hospital for the Insane, died from typhoid fever at a hospital in Iowa City, June 22, aged 30.

Hans H. Littlefield, M.D., 1887, for many years a member of the American Medical Association, died at his home in Beardstown, Ill., June 26, aged 79. He served two years as a surgeon of volunteers during the Civil War.

William S. Wolfe, M.D. Jefferson Medical College, Philadelphia, 1897, of Fleetwood, Pa., died from tuberculosis, June 12, while on his way home from New Mexico, where he had gone eight months before for his health.

Sumner Pixley, M.D. Philadelphia Medical School, surgeon of the 110th Ohio Volunteer Infantry in the Civil War, died at his home in Peninsula, Ohio, June 12, aged 87. He retired from active practice in 1890.

William L. Towndrow, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1856, of Snohomish, Wash., a surgeon in the Civil War, died at the City Hospital, Everett, Wash., June 11, from diabetes, aged 80.

James Calderwood, M.D. University of Cincinnati, 1870, of Steele, Ind., died at the home of his father in Blue Creek township, May 31, from stomach trouble, after an illness of a week, aged 64.

Charles Legg, M.D., formerly of Stringtown, German township, Richland County, Ill., died at the Illinois Southern Hospital for the Insane, Anna, June 14, after a long illness, aged 78.

J. D. Vinton, M.D. Philadelphia University of Medicine and Surgery, 1854, of Kimberton, Pa., died at the Phoenix Hospital, West Chester, Pa. June 14, after a long illness, aged 74.

Thomas W. Hewitt, M.D. Louisville Medical College, 1861, surgeon U. S. Army, retired, died at his home in San Antonio, Texas, June 21, from congestion of the brain, aged 64.

H. Cloud Rainwater, M.D. Tulane University, New Orleans, 1891, died at his home in Morrillton, Ark., June 7, from consumption, after an illness of two years.

Charles W. Shaw, M.D. Ohio Medical University, Columbus, 1898, of Madison Mills, Ohio, died at his former home, near Logan, June 2, from Bright's disease.

Alonzo Shaffer, M.D. University of Pennsylvania, Philadelphia, 1895, died at his home in Essex, Conn., June 26, after an illness of two months, aged 32.

Louis Goeschel, M.D. Chicago Homeopathic College, 1878, died at his home in Mandan, N. D., June 17, from cancer of the tongue, aged 47.

Hubbard A. Foster, M.D. Harvard University Medical School, Boston, 1871, died suddenly at his home in Buffalo, N. Y., June 16, aged 53.

J. D. Mundy, M.D. Kentucky School of Medicine, Louisville, 1878, died at his home in Denver, N. C., June 25, after a lingering illness.

Benjamin F. Graves, M.D., died at his home in Hamline, W. Va., from typhoid fever, May 24, after a short illness, aged 25.

S. A. Taylor, M.D., of East Point, Ga., committed suicide while despondent, June 20, by shooting himself through the head.

Gilbert R. Woolsey, M.D. Hahnemann Medical College, Chicago, 1868, of Normal, Ill., died at Cambridge, Ill., June 7.

Henry K. Middleton, M.D. University of Louisville, 1871, died at his home in Kirksville, Ky., June 25, aged 59.

Louis R. Ford, M.D. Medical College of Georgia, Augusta, 1870, died at his home in Waynesboro, Ga., June 26.

Juan Jose Ramirez de Arellano, M.D., died at his home in the City of Mexico, from typhus fever, May 23.

D. H. Herrell, M.D., 1878, died at his home in Hanna City, Ill., June 22, aged about 60.

State Boards of Registration.

Minnesota.—The Minnesota State Board of Medical Examiners held their regular examination at St. Paul, June 2, 3 and 4, 1903. The results are reported by Dr. C. J. Ringnell, the secretary, as follows: Number of subjects examined, 12; total number of questions, 95; percentage required to pass, 75; total number examined, 129; passed, 111; failed, 18; the list of successful and unsuccessful applicants with their colleges and schools of practice is as follows:

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
2178	R.	University of Minnesota...........	1903	80.6
2179	R.	University of Minnesota...........	1903	86
2180	R.	University of Minnesota...........	1903	86.9
2186	R.	University of Minnesota...........	1903	81.4
2187	R.	University of Minnesota...........	1903	85.6
2190	R.	University of Minnesota...........	1903	82
2191	R.	University of Minnesota...........	1903	82.1
2193	H.	University of Minnesota...........	1903	84.5
2194	H.	University of Minnesota...........	1903	82.7
2200	R.	University of Minnesota...........	1903	83.9
2201	R.	University of Minnesota...........	1903	84.9
2202	R.	University of Minnesota...........	1903	78
2208	R.	University of Minnesota...........	1903	83.1
2209	R.	University of Minnesota...........	1903	85.1
2210	R.	University of Minnesota...........	1903	79.9
2214	R.	University of Minnesota...........	1903	79.5
2215	R.	University of Minnesota...........	1903	86.2
2216	R.	University of Minnesota...........	1903	83
2217	R.	University of Minnesota...........	1903	84.5
2219	R.	University of Minnesota...........	1903	81
2220	R.	University of Minnesota...........	1903	77.9
2225	R.	University of Minnesota...........	1903	83.3
2226	R.	University of Minnesota...........	1903	80.9
2227	R.	University of Minnesota...........	1903	85.1
2245	R.	University of Minnesota...........	1903	76.8
2246	R.	University of Minnesota...........	1903	88.6
2247	R.	University of Minnesota...........	1903	84.2
2249	R.	University of Minnesota...........	1903	82.3
2250	R.	University of Minnesota...........	1903	86
2251	R.	University of Minnesota...........	1903	81
2253	R.	University of Minnesota...........	1903	78.9
2255	R.	University of Minnesota...........	1903	80.8
2256	R.	University of Minnesota...........	1903	77.2
2257	R.	University of Minnesota...........	1903	81.5
2258	R.	University of Minnesota...........	1903	90.8
2259	R.	University of Minnesota...........	1903	80.1
2268	R.	University of Minnesota...........	1903	83.1
2269	R.	University of Minnesota...........	1903	81.9
2270	R.	University of Minnesota...........	1903	86.9
2272	R.	University of Minnesota...........	1903	78.4
2274	R.	University of Minnesota...........	1903	82.4
2276	R.	University of Minnesota...........	1903	75
2278	R.	University of Minnesota...........	1903	78.2
2279	R.	University of Minnesota...........	1903	82.2
2280	R.	University of Minnesota...........	1903	80
2282	R.	University of Minnesota...........	1903	79
2283	R.	University of Minnesota...........	1903	75.2
2285	R.	University of Minnesota...........	1903	80.2
2286	R.	University of Minnesota...........	1903	82.4
2288	R.	University of Minnesota...........	1903	80.6
2289	R.	University of Minnesota...........	1903	80.5
2290	R.	University of Minnesota...........	1903	75
2292	R.	University of Minnesota...........	1903	80.5
2293	R.	University of Minnesota...........	1903	84.5
2294	R.	University of Minnesota...........	1903	82
2295	R.	University of Minnesota...........	1903	80.4
2296	H.	University of Minnesota...........	1903	82.1
2297	R.	University of Minnesota...........	1903	*81
2298	R.	University of Minnesota...........	1903	81.2
2299	R.	University of Minnesota...........	1903	80.9
2300	H.	University of Minnesota...........	1903	80.4
2301	R.	University of Minnesota...........	1903	81.8
2302	R.	University of Minnesota...........	1903	86.4
2303	H.	University of Minnesota...........	1903	77
2304	R.	University of Minnesota...........	1903	82.3
2305	R.	University of Minnesota...........	1903	87.8
2205	R.	University of Minnesota...........	1903	82.8
2262	R.	University of Minnesota...........	1903	85.5
2265	R.	University of Minnesota...........	1903	81.3
2248	R.	University of Maryland...........	1902	85.2
2252	R.	University of Iowa...............	1903	85.2
2267	R.	University of Illinois...........	1903	83.2
2181	R.	Hamline University................	1903	79.4
2182	R.	Hamline University................	1903	78.5
2184	R.	Hamline University................	1903	76
2185	R.	Hamline University................	1903	75.1
2188	R.	Hamline University................	1903	87.1
2189	R.	Hamline University................	1903	87
2198	R.	Hamline University................	1903	85.2
2199	R.	Hamline University................	1903	87.5
2203	R.	Hamline University................	1903	80.5
2228	R.	Hamline University................	1902	87.6
2229	R.	Hamline University...	1903	79.1
2230	R.	Hamline University................	1903	84
2231	R.	Hamline University................	1903	79.4
2232	R.	Hamline University................	1903	80
2233	R.	Hamline University................	1903	83.4
2234	R.	Hamline University................	1903	82.5
2235	R.	Hamline University................	1903	86.2
2237	R.	Hamline University................	1903	81.7
2238	R.	Hamline University................	1903	78.1
2242	R.	Hamline University................	1903	78.6
2243	R.	Hamline University................	1903	84.8
2244	R.	Hamline University................	1903	75.2

PASSED

Candidate.	Sch of Pract.	College.	Year Grad	Per Cent.
2261	R.	Hamline University..........	1903	78
2287	R	Hamline University............	1903	88 6
2192	R.	Rush Medical College.	1903	77 8
2204	R	Rush Medical College.... ..	1895	89 4
2196	R.	Barnes Medical College... .	1903	81
2206	R	Trinity Medical College.. .	1903	89 1
2224	R	Trinity Medical College.....	1903	82 3
2207	R	College of Phys and Surgs, Keokuk	1903	79 8
2211	H.	Hahnemann Medical College, Chicago	1903	83 7
2213	H.	Hahnemann Medical College, Chicago	1903	86 6
2263	H	Hahnemann Med Coll, Philadelphia	1903	79 5
2212	R	Detroit College of Medicine... .	1902	80 8
2218	R	College of Phys and Surgs Illinois	1903	80
2239	R.	Northwestern University, Chicago .	1903	86 3
2281	R	Northwestern University, Chicago	1903	77 9
2306	R	Northwestern University, Chicago	1903	82 2
2266	R.	Cooper Med College, San Francisco	1894	75

FAILED.

Candidate.	Sch of Pract.	College.	Year Grad	Per Cent.
2221	R.	University of Minnesota..	1903	*
2241	H	University of Minnesota..	1903	69 1
2273	R.	University of Minnesota.	1903	73 6
2277	R	University of Minnesota.	1903	71 1
2291	R	University of Minnesota.	1903	74 2
2271	R	University of Illinois..	1903	70 9
2236	R	Hamline University.... .	1903	67 7
2183	R.	Hamline University...	1903	71
2254	R	Hamline University.	1903	73 1
2260	R.	Hamline University .	1903	71 1
2275	R.	Hamline University .	1903	70 9
2284	R	Hamline University	1902	73 5
2195	R	Barnes Medical College	1903	74 8
2197	R	Barnes Medical College	1903	70 4
2223	R	Rush Medical College	1903	70 6
2240	R	Rush Medical College	1903	70 6
2222	R.	Iowa State University	1891	64 8
2264	H.	Hahnemann Med College, Chicago	1897	‡60 6

* Second examination

† Second examination No average, did not take all of examination

‡ Third examination

North Carolina Report—The Board of Medical Examiners of North Carolina held examination at Hot Springs May 27, 1903 Dr. George W. Pressly, Charlotte, secretary reports that the number of subjects examined in was 7; total questions, 70, percentage required to pass, 80; total number examined, 107, passed, 77; failed, 30. The examination was written

PASSED

Candidate	Sch of Pract.	College	Year Grad	Per Cent
20	R	University of Maryland	1903	90
23	R.	University of Maryland	1903	80
41	R.	University of Maryland	1903	85 5 7
44	R	University of Maryland	1903	81 2 7
57	R.	University of Maryland	1903	87 6 7
58	R	University of Maryland	1903	87 3 7
68	R	University of Maryland	1903	81 6 7
74	R	University of Maryland	1903	88 6 7
75	R	University of Maryland	1903	83 2 7
76	R.	University of Maryland .	1903	89 2 7
92	R.	University of Maryland	1903	80
88	R	Univ. of Penn, Med Dept, Phila	1902	89 5 7
100	R	Univ. of Penn, Med Dept, Phila	1900	*96 1 7
106	R	Univ of Penn Med Dept., Phila	1899	81 2 7
3	R	University Coll of Med, Richmond	1901	81 2 7
10	R	University Coll of Med, Richmond	1900	84 2 7
21	R	University Coll of Med, Richmond	1903	83 3 7
27	R	University Coll of Med, Richmond.	1903	‡95 2 7
29	R	University Coll of Med, Richmond	1903	88 3 7
30	R	University Coll of Med, Richmond	1903	†96
93	R	University Coll of Med, Richmond	1903	85 5 7
94	R.	University Coll of Med, Richmond	1903	89 4 7
9	R	Univ. of N C, M Dept, Chapel Hill	1903	86 4 7
7	R	Univ. of N C, M Dept., Chapel Hill	1903	92 1 7
71	R.	Univ of N C, M Dept, Chapel Hill	1903	92
72	R	Univ. of N C, M Dept, Chapel Hill	1903	86 6 7
25	R	University of Kentucky, Louisville	1901	80 1 7
84	R	University of Kentucky, Louisville	1902	82 5 7
46	R	University of Louisville, Kentucky	1903	86 3 7
54	R	University of Louisville, Kentucky	1903	80 4 7
47	R	University of Tennessee, Nashville	1903	80 5 7
51	R	University of Tennessee, Nashville	1903	80 2 7
5	R.	University of Georgia, Augusta	1900	87 6 7
28	R	University of Denver ..	1902	88 3 7
69	R	Univ. of Virginia, Charlottesville	1900	80
103	R	University of Michigan, Ann Arbor	1878	80
107	R	University of Texas, Galveston	1899	89 1 7
2	R	N. C. Med College, Davidson, N C	1902	81 1 7
12	R	N C Med College, Davidson N C	1903	91 6 7
16	R	N C Med. College, Davidson, N C	1903	86 2 7
37	R	N C Med College, Davidson N C	1903	80 6 7
38	R	N C Med College, Davidson, N C	1903	93 6 7
48	R	N. C. Med College, Davidson N C	1903	85
49	R	N. C Med College, Davidson, N C	1903	90 6 7
60	R	N C Med College, Davidson, N C	1898	84 1 7
61	R	N C. Med College, Davidson N C	1903	80
13	R	Med College of Virginia, Richmond	1903	84 4 7
15	R	Med College of Virginia, Richmond	1903	81 4 7
17	R	Med College of Virginia, Richmond	1903	84 4 7
18	R	Med College of Virginia, Richmond	1903	89 4 7
95	R	Med Coll State of S C, Charleston	1888	80
14	R	Baltimore Medical College.......	1903	83 2 7
22	R.	Baltimore Medical College... .. .	1903	85 3 7
24	R.	Baltimore Medical College.........	1903	87 4-7
101	R.	Baltimore Medical College.........	1903	85
8	R	Coll. of Phys and Surgs, New York	1903	92 1-7
77	R.	Coll. of Phys. and Surgs, New York	1900	90 2-7
78	R.	Coll. of Phys and Surgs., New York	1884	80
85	R.	Coll of Phys. and Surgs., St. Louis.	1903	80 3-7
90	R.	Coll. Phys and Surgs, Baltimore...	1903	82 6-7
26	R.	Tennessee Med. College, Knoxville..	1900	81 2-7
31	R.	Tennessee Med. College, Knoxville..	1902	80
34	R.	Leonard Med. Coll, Raleigh, N. C...	1903	81 3 7
40	R.	Leonard Med. Coll, Raleigh, N. C...	1903	85 2-7
63	R.	Memphis Hospital Medical College..	1903	86 3-7
99	R.	Memphis Hospital Medical College..	1902	80
80	R.	Louisville Medical College.........	1903	80
82	R.	Louisville Medical College.........	1903	82 3 7
1	R.	Atlanta College of Phys. and Surgs.	1903	92 1-7
36	R.	Howard University, Washington....	1900	80
50	R.	U. S Grant Univ, Chattanooga, Tenn.	1903	80 5-7
64	R.	Vanderbilt Univ., Nashville, Tenn...	1896	80 1-7
81	R.	National University, Washington...	1895	88 5-7
87	R.	Jefferson Med Coll, Philadelphia...	1903	92 3-7
104	R.	Denver and Gross Coll. of Medicine.	1903	82 6-7
105	R.	St. Louis Medical College..........	1875	80
73	R.	Baltimore Univ. School of Medicine.	1901	80

FAILED.

Candidate.	Sch of Pract.	College.	Year Grad.	Per Cent.
11	R.	Tennessee Med College, Knoxville..	1901	76 3-7
32	R.	Tennessee Med. College, Knoxville..	1900	75 2-7
35	R.	Tennessee Med College, Knoxville..	1902	69 1-7
65	R.	Tennessee Med. College, Knoxville..	1901	67 2-7
102	R	Tennessee Med College, Knoxville..	1901	53 4-7
42	R.	University of Maryland, Baltimore..	1903	76
55	R.	University of Maryland, Baltimore..	1903	76 6-7
56	R.	University of Maryland, Baltimore..	1903	76 3-7
43	R.	, Richmond.	1903	78
79	R.	ept., Augusta	1902	71 6 7
6	R.	Tennessee..	1900	56 2 7
52	R.	University of Tennessee, Nashville..	1903	77 3 7
96	O	Amer. Schl. of Osteo, Kirksville, Mo.	1903	**
97	O.	Amer. Schl of Osteo, Kirksville, Mo.	1903	65 6 7
98	O	Amer. Schl of Osteo, Kirksville, Mo.	1901	66
33	R.	Leonard Med College, Raleigh, N C.	1902	66 6-7
39	R.	Leonard Med College, Raleigh, N. C.	1902	69 6-7
66	R.	U. S Grant Univ, Chattanooga, Tenn.	1900	66 2-7
67	R	U S Grant Univ., Chattanooga, Tenn.	1903	68 1-7
62	R	N. C. Med Coll, Davidson, N. C....	1903	72 3-7
83	R	Atlanta Coll of Phys and Surgs...	1903	73 3-7
91	R	Atlanta Coll. of Phys and Surgs...	1895	††
4	R.	New York Med Coll and Hospital..	1867	††
19	E	Ga Coll Ec Med and Surg, Atlanta	1901	65 3 7
45	H	Boston Univ. School of Med, Homeo	1899	64 3-7
53	R	Memphis Hospital Medical College .	1901	76 2 7
59	R	Hospital Coll of Med, Louisville, Ky.	1902	72 2-7
70	R	Louisville Med. College, Kentucky..	1898	62 1-7
86	R	Med. Coll State of S C, Charleston.	1900	70 6-7
89	O	Boston Institute of Osteopathy.....	1901	61 6 7

* First honor

† Second honor

‡ Third honor.

** Not graded Caught cheating

†† Withdrew

Association News.

New Members.

New members for the month of June, 1903.

ALABAMA.

Gay, W. S, Whistler

ARKANSAS

Dickson, A G, Paragould
Norton, M M Sunny Side
McGeehee, E P, Lake Village.
Sims, W A, Paragould

CALIFORNIA.

Jones, H Isaac, San Francisco.
Rooney, R F, Auburn
McGaveren, H S, Sacramento.
Wright, H E, Sacramento
Brown, Adelaide, San Francisco
Grossman, E L, San Francisco
Waterman, H J, Berkeley
Watkins J T, San Francisco.
Sperry, Mary A, San Francisco
McGettigen, C D, San Francisco
Clark, J R, San Francisco
Baker, C C, San Francisco
Collischonn, P, San Francisco
Berndt, R M H, San Francisco

CONNECTICUT

Axtelle, J F, Hartford
Bronson, W T, Danbury

DISTRICT OF COLUMBIA

Lee, Thomas S, Washington
Castelli, Enrico, Washington

FLORIDA

Byrd, Hiram, Arcadia
Caraballo, Martin, Tampa.
Helms, J P, Tampa.

GEORGIA.

Smith, Jr, Archibald, Atlanta.
DeLamar, W. C, Mountain Hill.

ILLINOIS

Kahn, Harry, Chicago
Baccus, V. J., Chicago
Vanderhoof, H. W, Wheaton.
Black, Joseph N, Clayton.
Bassoe, Peter, Chicago
Clausius, Max F., Palatine.
Gay, W. W., Rockport.
Richter, H M, Chicago.
Worthington, Major H, Chicago.
Chvatal, J. F, Chicago.
Guilford, Paul, Chicago
McMichael, Orville W, Chicago.
Thompson, W M, Chicago.
Williams, J. C, Chicago
Metcalf, Henry S, Mt. Carroll
Houston, James P, Chicago
Lagorio, Antonio, Chicago.
Beyerlein, Louis J, Chicago
Fosberg, George E, Chicago.
Rickett, Howard Taylor, Chicago
Illingworth, G. M, Chicago
Findley, Palmer, Chicago.
Thompson, Wm A, Olney.
Spaulding, D N, Chicago
Seifert, Mathias J, Chicago

INDIAN TERRITORY.

Haley, W. A, Durant.

INDIANA.

Luckett, Charles D., English.
Fulton, George E., Bluffton.
Garr, J. C., Kokomo.
Whitson, E. M., Jonesboro.
Gould, S. W., Argo.

IOWA.

Sprague, M. H., Ottumwa.

KENTUCKY.

McKenney, Elbert B., Caneyville.
Zimmerman, Carolyn E., Newport.
Browne, M. S., Winchester.
Kiser, Jefferson D., Lexington.
Kincaid, James W., Catlettsburg.
Moore, A. H., Ashland.

LOUISIANA.

Sewell, Bennett N., Bryce.
O'Donnell, Robt. W., New Orleans.

MARYLAND.

Claybrook, E. B., Cumberland.
Mayer, A. H. A., Baltimore.

MASSACHUSETTS.

Haynes, Mabel Stevens, Boston.
Gardner, Charles W., Boston.

MICHIGAN.

Bratton, Edw. E., Detroit.
Haines, Thos. J., Three Rivers.
Barth, Louis, Grand Rapids.
DeWitt, Lydia M., Ann Arbor.
Johnston, Stuart, So. Lake Linden.
Stapleton, Jr., Wm. J., Detroit.
von Colditz, G. Thomsen, Mount Clemens.
Henkel, Julius F., Detroit.
Meddaugh, Martin V., Detroit.
Taylor, Geo. Gordon, Allegan.
Burdon, Reginald M., Houghton.
Lickler, Edw. H., New Baltimore.
Adam, James R., Detroit.
Morden, E. T., Adrian.
Schenck, Benj. R., Detroit.
Youngquist, O. G., Marquette.
Yates, John C., Norwood.
Flynn, E. H., Marquette.
Galbraith, Stuart E., Pontiac.

MINNESOTA.

Schmitt, Aaron F., Wells.
Crowe, John H., Virginia.

MISSISSIPPI.

Brooks, J. S., Robinsonville.
Alexander, Morris J., Tunica.
Crisler, J. A., Yazoo City.
Shivers, M. O., Greenville.

MISSOURI.

Hardy, John W., Sumner.
Behrens, Louis H., St. Louis.
Stuckle, W. P., Clyde.
Kessler, E. H., St. Louis.
Allen, A. B., Maryville.
Sayler, H. L., Elmo.
Crowson, E. L., Pickering.

NEBRASKA.

Edgington, A. E., Omaha.
Pinto, A. S., Omaha.
Brown, H. A., Long Pine.
Stewart, M., Tecumseh.
Keettle, Wm. C., Lyons.

NEW YORK

Palmer, Albert H., Marlborough.
Heston, E. H., Clintondale.
Sauer, J. George, New York.
Dick, Andrew J., Watertown.

NORTH CAROLINA.

Mason, R. E., Charlotte.

OHIO.

Moxley, N. K., Ironton.
Williams, John G., Cincinnati.
Trimmer, E. Luther, East Liverpool.
George, John F., Ft. Jennings.

PENNSYLVANIA.

Walker, S. E., Philadelphia.
Roderick, Edw. R., Wilkesbarre.
Mengel, S. P., Parson.
Hartman, Jr., Lawton M., York.
Easby, Alice R., Media.
Pyfer, Howard F., Norristown.

SOUTH CAROLINA.

Baker, S. Chandler, Scranton.
Rees, Charles M., Charleston.
Neil, George P., Greenwood.

SOUTH DAKOTA.

Hetlesater, Reinert, Canton.

TENNESSEE.

McCown, Oswald Stuart, Memphis.

TEXAS.

Morgan, George L., Turtle Bayou.
Conson, Augustus H., Gainesville.
Terry, J. S., Ennis.
Swain, Geo. W. B., Dallas.
Moore, Jr., Jos. Franklin, Tyler.
Chapman, John B., Paris.
Rosser, Charles M., Dallas.
Parker, G. D., Houston.
Stuart, Joseph R., Houston.
Jones, W. C., Sherman.

VERMONT.

O'Brien, Jas. F., Bellows Falls.

VIRGINIA.

Shepherd, Lemuel C., Norfolk.

WASHINGTON.

Smith, Clarence G., Seattle.
Cunningham, Arthur R., Spokane.
Chenoweth, W. S., Sprague.
Genoway, Charles, Spokane.

WEST VIRGINIA.

Abel, Wm. Clay, Mt. Union.
St. Clair, Wade Hampton, Bluefield.
Hatfield, H. D., Eckman.
Mahood, C. F., Rend.

WISCONSIN.

Reynolds, N. W., Lone Rock.
Cuolahan, Archibald, Merrill.
Pope, F. J., Racine.
Collins, C. D., Milwaukee.
Dohearty, F. P., Butternut.
Boden, J. E., Milwaukee.
Rosenberry, Abraham Bertolet, Arbor Vitae.
Steenberg, H. S., Milwaukee.

Medical Organization.

Reorganization in Minnesota.

Minnesota was the last of four great states to set aside its action of partial reorganization of last year and adopt the constitution and by-laws recommended by the American Medical Association in full. The annual meeting was held at St. Paul, June 17 to 19.

While much had been accomplished during the year, and the membership had greatly increased, the new plan of organization was defective and unsatisfactory. No provision was made for a house of delegates or council, and membership in county societies was left optional. As a partial offset to these defects, and especially to the lack of a council, Dr. W. S. Fullerton, an efficient and enthusiastic worker, was appointed state organizer. Although his work was single-handed, and largely gratuitous, he had visited and organized fifty-eight counties during the year, and had laid the foundation for a complete organization.

After his return from the New Orleans meeting, Dr. J. W. Andrews, president of the State Association, began an active campaign for the adoption of the uniform plan of organization. His annual address was mainly devoted to this, and was an able presentation of the subject. At its close, a committee was appointed to consider the question, with instructions to report during the meeting. On the following day the committee reported, recommending that the action of last year be rescinded and that the uniform plan of the Association be substituted therefor. This was done by a unanimous vote. The committee also recommended that the state be divided into eight councilor districts, arranged according to the lines of travel, and that, in partial recognition for the value of his services in the past, Dr. Fullerton be made chairman of the first council.

The meeting was fairly well attended and was interesting throughout, in spite of a bad section arrangement which has found its way into many state associations. Under the old plan of organization the society was divided into three sections, the first day being devoted to surgery, the second to internal medicine, and the third to state medicine. This would probably be an unfortunate arrangement, even for a large meeting, for obvious reasons, but is especially so where the attendance is not large. Such meetings are for the entertainment and benefit of all, but particularly for the general practitioners from town and country districts, and the work in the different branches should be so interlarded in the program as to engage the attention of all classes, at least during a large part of every day.

The officials elected for the ensuing year are as follows: President, Charles Lyman Greene, St. Paul; vice-presidents, Charles Hill, Pine Island; Jeannette M. McLaren, St. Paul, and Walter H. Darling, St. Peter; secretary, Thomas McDavitt, St. Paul; treasurer, Richard J. Hill, Minneapolis.

Council.

Wm. S. Fullerton, St. Paul; Frederick A. Knights, Minneapolis; Alfred E. Spaulding, Luverne; Adolph O. Bjelland, Mankato; Eugene H. Hensel, Alexandria; Harper M. Workman, Tracy; Walter Courtney, Brainerd, and Franklin A. Dodge, Le Sueur.

It may be interesting to note that twenty-eight states have now adopted the uniform plan of organization. This includes all of the great states in the Ohio and Mississippi valleys, all the Lake and Gulf states, two of the three Pacific states, besides North Carolina, New Jersey, New Hampshire, Colorado and Idaho, in other sections. If systematic work can be kept up within all of these states for a few years, with the intelligent enthusiasm now promised, we shall have an organized profession.

J. N. McCormack.

Societies.

Humboldt County (Cal.) Medical Society.—This society, at its regular meeting, June 9, adopted the amended constitution and by-laws, so that it now is in conformity with the state society.

Buncombe County (N. C.) Medical Society.—At its meeting in Asheville, June 15, the society adopted the changes in its constitution and by-laws necessary to make them conform to those proposed by the American Medical Association.

Cheboygan County (Mich.) Medical Society.—At the annual meeting held in Cheboygan, June 16, Dr. Wilbur F. Reed was elected president, Dr. Ira C. Williams, vice-president, and Dr. Charles B. Tweedale, secretary-treasurer, all of Cheboygan.

Lane County (Ore.) Medical Association.—At the annual meeting held in Eugene, June 17, Dr. Waldo L. Cheshire, Eugene, was elected president; Dr. George Wall, Cottage Grove, vice-president, and Dr. John W. Harris, Eugene, secretary and treasurer.

Cedar County (Neb.) Medical Society.—This society, a component part of the state medical society, met at Hartington, June 24. Every physician in the county is a member of the society. The next meeting is to be held in Randolph on September 24.

Columbus (Ohio) Academy of Medicine.—The consolidation of the Franklin County Medical Society with the Columbus Academy of Medicine, was perfected at a meeting of the latter society, June 1, when the joint committee on membership reported favorably on 21 applications.

Johnson County (Kan.) Auxiliary Medical Society.—Physicians of Johnson County met at Olathe, June 11, and organized this society, with Dr. H. E. Williamson, president; Dr. Jessie Thomas, vice-president; Dr. Frank F. Greene, secretary, and Dr. B. Frank Stout, treasurer, all of Olathe.

Elkhart County (Ind.) Medical Society.—At its meeting, June 25, the society decided to change its conditions of membership to accord with those of the state and national societies. Dr. John C. Fleming, Elkhart, was elected president; Dr. I. Wright Short, Elkhart, vice-president, and Dr. Yoder, Goshen, secretary-treasurer.

Iberville Parish (La.) Medical Society.—The physicians of Iberville Parish met at Plaquemine, June 17, and organized a parish medical society, with the following officers: Dr. Arthur A. Allain, Bayou Goula, president; Dr. Francis J. Keamey, Plaquemine, vice-president, and Dr. Eugene Halloway, Plaquemine, secretary and treasurer.

Iowa Health Officers' and City Physicians' Association.—The health officers and city physicians of Iowa met at Des Moines, June 16, effected a temporary organization, with Dr. Joseph A. Valenta, Iowa City, chairman, and Dr. Cassius T. Lesan, Mount Ayr, secretary, and appointed committees on constitution and by-laws, permanent organization and finance.

Branch County (Mich.) Medical Society.—This society, recently organized under the constitution and by-laws proposed by the American Medical Association, at its meeting in Coldwater, June 16, elected Dr. Stephen H. Clizbe, Coldwater, president; Dr. Henry W. Whitmore, Quincy, vice-president, and Dr. Samuel Schultz, Coldwater, secretary and treasurer.

Lewis County (Ky.) Medical Society.—About half the physicians of Lewis County met at Vanceburg, June 15, and organized a county medical society, to be in affiliation with the Kentucky State Medical Society and the American Medical Association. Dr. James W. Kincaid, Catlettsburg, councilor for the district, was present and explained the plan of organization. Dr. Lewis A. Grimes, Concord, was elected president; Dr. John F. Irvine, Tolesboro, vice-president; Dr. Aaron F. Hill, Vanceburg, secretary, and John C. Graham, Trinity, treasurer.

International Association of Railway Surgeons.—The annual meeting was held in Indianapolis, June 18. The next meeting will be held in Chicago in May, 1904. The following officers were elected: President, Dr. James H. Ford, Indianapolis; vice-presidents, Drs. James M. Weaver, Dayton, Ohio; Edwin F. Yancey, Sedalia, Mo.; M. V. B. Newcomer, Tipton, Ind.; Charles R. Dickson, Toronto, Ont.; William R. Hamilton, Pittsburg, Pa.; David F. Stuart, Houston, Texas, and Hugh M. Taylor, Richmond, Va.; secretary, Dr. Louis J. Mitchell, Chicago, and treasurer, Dr. James A. Duncan, Toledo, Ohio.

Frisco Medical Association.—The second annual meeting of the surgeons of the Frisco system was held in Springfield, Mo., June 23 and 24. The following officers were elected: President, Dr. George W. Cale, Springfield; vice-presidents—for Alabama, Dr. Edward P. Lacey, Bessemer; for Arkansas, Dr. H. Clay Dunavant, Osceola; for Indian Territory, Dr. Fred S. Clinton, Tulsa; for Kansas, Dr. George C. Purdue, Wichita; for Mississippi, Dr. Samuel A. Gassaway, New Albany; for Missouri, Dr. George O. Coffin, Kansas City; for Oklahoma, Dr. A. H. Bourgardt, Cordell; for Tennessee, Dr. W. Britt Burns, Memphis, and for Texas, Dr. Willliam A. Duringer, Fort Worth; secretary, Dr. Roche W. Hogeboom, Springfield, Mo., and treasurer, Dr. Walter A. Camp, Springfield, Mo.

Connecticut Medical Society.—The one-hundred and eleventh annual meeting was held in Hartford, May 27 and 28, under the presidency of Dr. Gould A. Shelton, Shelton. The committee on tuberculosis reported that, of the 696 members of the society, only 115 had returned replies to the circular sent out by the commitee, which did not feel justified in assuming that the conclusions drawn from the collective investigations represented the concensus of opinion of the society. The president, in his address, commented favorably on the organization scheme as proposed by the American Medical Association, and on the elevation of the standard of medical education approved by the American Association of Medical Colleges and by the American Medical Association. The committee on revision of constitution and by-laws on the plan recommended by the American Medical Association, reported that it would not be able to make a complete report until the next meeting. The following officers were elected: President, Dr. Samuel B. St. John, Hartford; vice-president, Dr. William H. Carmalt, New Haven; secretary (for four years), Dr. Nathaniel E. Wordin, Bridgeport; assistant secretary, Dr. Henry S. Miles, Bridgeport; treasurer, Dr. William W. Knight, Hartford, and delegate to the American Medical Association, Dr. L. Duncan Bulkley, Norfolk. At the annual banquet, Dr. Oliver C. Smith, Hartford, presided as toastmaster. Charles T. Wells, a son of Dr. Horace Wells the Hartford discoverer of anesthesia, presented the society with a portrait of his father taken in 1825.

Ontario Medical Association.—The annual meeting was held in Toronto on June 16, 17 and 18. Dr. J. C. Mitchell of Toronto presided, and Dr. Harold C. Parsons, Toronto, acted as secretary. Dr. J. H. Musser, Philadelphia, President-elect of the American Medical Association, was present and delivered a very able and practical address on the treatment of pneumonia. In moving a vote of thanks to Dr. Musser, Dr. N. A. Powell jocularly referred to the powerful influence the Ontario Medical Association wielded in electing the Presidents of the American Medical Association. Some years ago Dr. Henry O. Marcy, Boston, was a guest of the association, and the American Medical Association promptly made him its President. Then followed Dr. John A. Wyeth, with a similar result, and now the good record had been kept up in Dr. Musser. Dr. Thomas S. Cullen, Baltimore, presented a valuable paper on "Uterine Myomata and Their Treatment." Mr. I. H. Cameron, in moving a vote of thanks to Dr. Cullen, stated he believed it was the best contribution on the subject ever written. A very interesting address on the medical witness under cross-examination was delivered by Hon. W. R. Riddell, K. C., Toronto, who divided all liars into three classes, liars, d——d liars and medical experts. A very interesting and profitable discussion took place on the morning of the third day on the subject of arteriosclerosis. The etiology and pathology was dealt with by Dr. H. B. Anderson of Toronto; the cardiac aspect by Dr. T. W. G. McKay, Oshawa, Ont.; the renal aspect by Dr. John Caven, Toronto; the cerebral aspect by Dr. Hugh McCallum, London, Ont.; the ophthalmic lesions by J. Cameron Connell, Kingston, Ont.; and therapeutics by Dr. John L. Davison, Toronto. The following officers were elected: President, Dr. James F. W. Ross, Toronto; secretary, Dr. Charles P. Lusk, Toronto; treasurer, Dr. Andrew R. Gordon, Toronto. Toronto was selected as the next place of meeting.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, June 2, 1903.

The President, Dr. Wendell Reber, in the Chair.

Symposium on Epilepsy.

"The Treatment of Epilepsy" was the title of a paper read by Dr. Luther C. Peter, in which he directed attention to the fact that the treatment of the disease must be largely prophylactic, first, by preventing the causes which give rise to the convulsion, and second, by preventing the subsequent convulsions, with the consequent mental and physical changes. He believed that much more could be done for the patients by careful attention to the diet, daily bath, sleep and environment, especially in children, than by medical measures; and these measures are particularly important if the child has a neurotic predisposition. He believed tea and coffee acted in many cases as inducing factors, and in some cases were the only causes of epilepsy in children; the great amount of mental work done by children with the present school system, he believed, also was accountable for a considerable number of these cases. After the epileptic habit is formed the general management of the case is important, and while he believed that drugs played an important rôle in the cure of these cases, he felt that the general management was the most important factor of every complete recovery. The author recommended the closest scrutiny of all parts of the body in order to detect any cause for epilepsy, and stated that he had seen cures follow the correction of refractive errors, removal of adherent foreskin, removal of constipation, etc., the success depending entirely upon the early recognition of the condition and removal of the cause. The toxic form, including the alcoholic type, he believed to be especially amenable to general treatment. It is pretty generally conceded that the convulsion has its origin in the cortical cells, and, therefore, the class of drugs which do the most good are nerve sedatives, the drug most extensively used being the bromid salts. He stated that he believed in many instances the mental dullness was due more to the excess of the bromids than to the epilepsy, and referred to the fact that few patients could take this remedy in larger amounts than 30 to 40 grains per day for any length of time without producing bromidism; the addition of several drams of infusion of digitalis often intensifies the sedative action, without aggravating the bromidism; a minim or two of Fowler's solution will prevent the acne. Chloral will act beneficially for a time in controlling the convulsions, and if the patient has mental warning of the approach of an attack and it is given in sufficiently large doses it will often prevent the convulsion. He stated that he had used the fluid extract of solanum in a considerable number of cases, and in adults had found that as good results could be secured with from 2 to 4 drams of this drug as from 10 to 15 grains of potassium bromid, and its use can be continued indefinitely without the depressing mental effects. Its use has been followed by equally gratifying results in children, who usually stand the bromids so poorly. In those patients who have a considerable period of premonition, inhalation of nitrite of amyl is of much value in warding off the attack.

Diagnosis of Atypical Epilepsy.

Dr. A. C. Buckley read a paper on the above subject, in which he called attention to the necessity for early diagnosis and correction before the nervous mechanism had formed the epileptic habit. After giving in detail the symptoms of a typical attack of epilepsy, he stated that there were many cases which were not recognized for months, or perhaps years, owing to the fact that the attacks may be of such a nature as not to be noticed by the patient or his family, or may occur only during the sleeping hours, when, except for the fact that he feels fatigued and has marked muscular soreness upon awakening, the patient when he seeks medical advice is not aware of his true condition. He believed that the minor attacks were less responsive to treatment than the major attacks. They usually consist of momentary unconsciousness which very often is not recognizable, and it is in these that the greatest deviation from the set symptoms occur. Nocturnal epilepsy, when the symptoms are not sufficient to be recognized by the patient, can only be diagnosed by the after-signs, such as soreness of the tongue, usually on one side, frequently blood stains on the pillow, if the tongue has been bitten, minute conjunctival extravasations, voiding of urine in bed, and even these are frequently absent. He believed that a confusing factor in diagnosis was the differentiation between the minor epileptic attacks and the syncopal attacks; the epileptic attacks occur independent of the surroundings and in the absence of any predisposing causes, such as emotion, physical exertion, overheated rooms, hot, humid weather, etc., which frequently produce syncopal attacks. In the latter condition there is usually an irregular pulse and clammy skin, which is not present in epilepsy. In epilepsy the loss of consciousness is sudden and complete, and returns quickly, while in syncope it is usually preceded by a subjective feeling of faintness. Epilepsy may be preceded by an aura which may be described as a feeling of faintness, but there is usually associated with it a sensation of fear or strangeness which is not present in syncope. Distinct vertigo is in favor of epilepsy, although care must be taken to distinguish the vertigo from dizziness, which is sometimes present in syncope. He considered the automatic type of epilepsy of great importance. He believed that hysteroid could usually be distinguished from epileptic seizures by the fact that the former are usually coordinated.

Dr. Charles W. Burr referred to the fact that the etiology of epilepsy was still very much in the dark, and believed that the greatest hope lay in the prevention, rather than the cure, of epilepsy, and in children predisposed to this condition, it is especially important that they should live out of town, have nourishing food and avoid mental overwork. He believed that alcohol played a considerable rôle in the production of epileptic seizures, and reported the case of a shoemaker, who would have attacks only after a drunken debauch. He felt that many of the cases of dementia were much accentuated by the long-continued use of bromids, and while he had not attained very good success with horse-nettle, thought this fact could probably be accounted for in that he had not given it in sufficiently large doses. In regard to diet, he did not believe that the patient should be required to forego red meat altogether, although he felt that its use should be restricted. He referred to several cases of post-epileptic automatisms, one man would go through the motions of pulling a rope for three or four minutes every time he would have an attack, and he expressed the opinion that in some instances this condition was responsible for the perpetration of innocent crime.

Dr. Samuel Wolf felt that a careful study of the aura in connection with the sensory nerves might reveal something in regard to the etiology of the condition, and expressed the opinion that the attack originates in the peripheral sensory nerves rather than in the cortical cells. He referred to the fact that a large number of curious conditions have been recognized as epileptic equivalents directing particular attention to the fact that an Italian writer had recently advanced the theory that a good many of the cases of tachycardia are really cases of epilepsy, and reported a case of tachycardia which had recently come under his observation which he rather inclined to think was of this class. In the treatment of epilepsy he believed the bromids to be the foremost remedies, and if bromidism occurs, the addition of one or two drops of Fowler's solution with each dose is of value. Atropin is also frequently of advantage in conjunction with the bromids.

Dr. Wendell Reber stated that he had made a careful study of the ocular condition of about fifty epileptics for about a year, and found pupillary inco-ordination in about one to three, optical imbalance in about 35 per cent., and in a good many hypermetropic astigmatism was present. He did not attach much importance to these eye conditions, however, as all of them frequently exist in other conditions. He referred to the fact that a majority of epileptics were great overfeeders and not very active.

Dr. Lewis H. Good reported a case of a man who became intoxicated, and after he went home fell over in a fit; after this was over he was very violent for about an hour, breaking up furniture, etc., after which he fell into a deep sleep or comatose condition. He also reported another case, apparently hysterical, in which the symptom is incessant talking for about half an hour, the acts being both nocturnal and diurnal. The patient was run over by a wagon when a child and at puberty had amenorrhea and dysmenorrhea, since which time she has had these attacks.

Dr. Solomon Newmayer referred to the rarity of the occurrence of epilepsy among the Hebrew race. He reported the case of a man who was suddenly taken ill on a very hot day; he became unconscious, had a temperature of 104 degrees; spermic fever was suspected and the usual treatment applied. After about an hour he revived, the case proving to be one of epilepsy.

Dr. J. Frank Wallis reported three cases of convulsions, one of which he attributed to the patient eating cabbage, the other to eating sausage and pretzels, and the third to the fact that the patient had eaten a very hearty dinner. All of these cases were relieved by rectal injection, and the suggestion was made as to whether they were cases of true epilepsy or not.

Dr. Nathan G. Ward referred to cures that had been reported by the removal of obstructions of the naso-pharynx or by the removal of obstructions from the ear, the condition in most of these cases being obstruction or deflection of the septum, adenoids, enlarged tonsils and a few cases of pharyngeal abscess and suppurated ears. He believed that the greatest good could be secured by the use of prophylactic measures tending to prevent the attacks.

Dr. Charles C. Biedert reported the cases of two brothers, both of a neurotic temperament, in which the attacks were frequently superinduced by disputes with their wives, in which the cold-water treatment was administered with gratifying results. He also referred to a case caused by alcoholism which was benefited by this same method.

Dr. Howard S. Kinne felt that a very important factor in the prophylactic treatment of epilepsy was the placing of all infants on a properly nourishing diet, as nearly similar as possible to the mother's milk. He believed that one reason why epilepsy was less frequent among the Hebrew race was owing to the fact that the mothers usually nurse their children. Alcohol he did not believe played a very important part in the production of epilepsy in the subject himself, but was more manifest in his descendants.

DR. WILLIAM EGBERT ROBERTSON called attention to the fact that convulsive attacks produced by bradycardia are very similar to the epileptic seizures. He believed that too often convulsions in children were attributed to teething and very little attention paid to them, which he felt accounted for at least some of the cases of epilepsy. He felt that tea and coffee played but a small rôle in the production of epilepsy in those not predisposed to the disease.

DR. LUTHER C. PETER, in closing, stated that he did not believe solanum to be any better drug than bromid, but its greatest merit consisted in the fact that it could be given in sufficiently large doses to benefit the patient for a long time, without producing any mental effects. In regard to alcohol as a causative factor, he stated he had three cases under his observation at the present time, who were subject to the seizures only after a debauch, but did not feel prepared to say that this was the cause of the epilepsy.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Twelfth Annual Meeting, held in Boston, May 19, 20 and 21, 1903.

The President, Brigadier General Robert A. Blood, Surgeon General of Massachusetts, in the Chair.

Welcome.

The opening session was held in Faneuil Hall, where the association was welcomed to Boston by Governor J. L. Bates and Dr. George E. Francis, president of the state medical society.

President's Address.

GEN. ROBERT A. BLOOD discussed the value of the association in bringing into harmony the work of the medical officers of the regular establishment, the national guard and the volunteers, considering this in the light of his own experience during the Civil and Spanish-American wars, and held that, with the facilities afforded by the association for uniform conduct, nothing but the failure of the government to make prompt, proper and ample appropriations could interfere with the highest efficiency of the medical service.

Public Service Medical School.

LIEUT.-COL. JOHN VAN R. HOFF, U. S. A., reported for this committee on the work of the Army and Navy medical schools for the year, and detailed the recommendations of the Surgeon-General of the Army relative to the establishment of an army medical school, in which a candidate should pass one year as a medical cadet and four years as a medical officer. Colonel Hoff, however, proposes to go still further and educate government medical officers *a binitio*, at an institution similar to the military academy at West Point, at which preparation would be made for all branches of the medico-military service.

COL. R. R. DE WREDEN, of Russia, described the Imperial Medical School at St. Petersburg, which gives its students their entire medical and military education, and whose graduates are assigned to hospitals or regiments in accordance with their class standing; the seven highest in each class being sent abroad to elaborate their studies and return as adjunct professors; the next highest being assigned to the hospitals, and the remainder to regiments.

Education of the Medical Officer of the Army.

MAJOR WILLIAM C. BORDEN, U. S. A., gave a succinct survey of the post-graduate instruction of the United States Army, dwelling especially on the work of the Army Medical School and incidentally referring to similar schools of other countries. He urged the extension of the facilities of the school to the medical officers of the militia.

This article was discussed at length by representatives of the United States Navy, various volunteer officers and the representatives from Canada and England. In closing the discussion Major Borden admitted the necessity of thorough professional training in the military medical officer as a prime factor, but recognized that in military service, administrative work was also of great importance.

The Acting Assistant Surgeon.

MAJOR AZEL AMES, U. S. V., commented on the anomalous position of the contract surgeon of the United States Army, observing that he had all the responsibilities and shared all the dangers of his commissioned colleague without either the honors or rewards to which the latter may look forward. He can anticipate no promotion, has no increase in pay for length of service, has no retirement nor pension when he becomes worn out in the service. The author forcibly urged the improvement of the status of this valuable and yet officially unappreciated member of the military service.

The Presidio General Hospital.

COL. ALFRED C. GIRARD, U. S. A., presented an exhaustive report of the U. S. A. General Hospital at the Presidio of San Francisco, Cal., for the years 1901-02. The report dealt with the general administration, the medical, surgical, bacteriological, eye, ear, nose and throat and the x-ray work. The total number of patients was 4,551, with a mortality of 92. The surgical cases numbered 728, of which 106 were for hernia, 58 for gunshot wounds, 35 for varicocele, 27 each for appendicitis and tumors, 10 each for bolo wounds and hepatic abscess. The report was accompanied by valuable appendices on liver abscesses, and the mosquitoes of the Philippines.

Surgeons General of the Army.

MAJOR JAMES EVELYN PILCHER, U. S. V., presented a series of biographical sketches of the surgeons general of the army, from the Revolution to the close of hostilities in the Philippines, illustrated by a complete series of portraits.

Instruction of Hospital Corps.

CAPT. FREDERICK P. REYNOLDS, U. S A., detailed the following principles on which the work of the U. S. A. Hospital Corps Company of Instruction should be based: 1. To at once impart a thorough knowledge of discipline in the same way and by much the same methods as is imparted in the line of the Army, with which the hospital corps is always serving; 2, to teach men the principles of order and neatness, both as regards themselves and their personal equipment, and also to familiarize them with the departments of a hospital and the articles with which they work; 3, after this, to impart to each man a knowledge, as far as his mental capacity will permit, of practical nursing, of preparation of diets for the sick, of first-aid and transportation of the wounded, and of ambulance driving and care of animals; 4, to teach them to care for themselves and the equipment entrusted to them in field service, and to be familiar with the usual duties of hospital corps men on the march, in camp, and during an engagement; 5, to instruct in clerical work, materia medica and pharmacy those who have aptitude for such work.

Retirement and Pensions.

MEDICAL DIRECTOR JOHN C. WISE, U. S. N., premised that the medical officers of the United States Navy are more directly responsible than anyone else for the ultimate incidence of our vast pension appropriation, and urged the highest care in diagnosis and record with especial attention to the question of incurrence if disability in the line of duty.

Prevention of the Spread of Infectious Diseases on Board Ship.

SURGEON HENRY G. BEYER, U. S. N., confined himself to the consideration of measles, an affection of singular importance in military and naval service, and recognized that the chief danger of infection in this and allied diseases lay first with the patient, and only secondarily with the persons and things with which he had been brought in contact. The author's practice was, the disease having been diagnosed, to sterilize by steam the patient's clothes, using bichlorid for disinfecting the shoes. The patient then had a thorough scrubbing with soap and warm water, and a complete sponging with bichólorid 1 to 2,000, and was put to bed wrapped in a sheet moistened with the same solution. The bichlorid bath was repeated thrice daily during the height of the eruption and twice a day thereafter. The mouth and nose were frequently cleansed with normal salt solution containing a minute quantity of carbolic acid or bichlorid. All excretions were immediately disinfected and complications promptly treated. By the use of these precautions the author believed it possible readily to control the spread of the disease.

Antimalaria Work.

Lieut. F. F. Russell, U. S. A., summarized the result of two seasons of work against malaria made at Ft. Washington, Md., 13 miles below Washington. The use of petroleum on the stagnant breeding pools in the neighborhood was immediately beneficial, resulting in the first year in the diminution of the percentage of malarial cases from 19.53 to 8.63; and this percentage was reduced the following year to 4.18. The use of the oil was a measure of temporary resort only, and the author considered that a portion, at least, of the good results, was due to the establishment of a general drainage system.

Tuberculosis at Fort Stanton.

Surgeon Paul M. Carrington, U. S. P. H. and M.-H. Service, described the treatment of tuberculosis at Fort Stanton. He is a sturdy advocate of tent-dwelling for the consumptive. The spread of infection is controlled by the use of spit cups and periodical disinfection of apartments. While an advocate of exercise under favorable conditions the author believes that the advice to "go West and rough it on a ranch" is responsible for many unnecessary deaths.

Medical Treatment of Appendicitis.

Lieut. E. Castelli of the Italian Army believes that the appendix must be considered as a tubular ganglion, receiving germs either from the blood or the lymphatics, by which appendicitis may become a complication in scarlet fever, pneumonia, erysipelas, parotitis, etc. The author is opposed to treatment by opium or local ice applications, but resorts to preliminary treatment by salicylate of sodium as a cholagogue and antithermic. Three hours later he administers calomel as an antiseptic, cholagogue, laxative diuretic and pancreatic stimulant. He controls the pain by warm baths and hot saline solution enemata. The bacterial cause of the trouble, residing in the blood, is treated by subcutaneous injection of a dilute carbolic acid solution.

Latent Malarial Infection.

Lieut. Charles F. Craig, U. S. A., described the pathology of malarial infection, which had not been manifested by symptoms, and in which blood examination did not necessarily show the presence of malarial parasites. His observations were based on autopsy findings. He found that the changes were confined almost entirely to the spleen, and consisted chiefly in an engorgement of the splenic sinuses with red cells and leucocytes, the presence of infected red cells and of phagocytes and melaniferous leucocytes, increase in the cells and the splenic pulp with more or less degeneration and karyokinesis and pigmentation of the organ confined to the edges of the Malpighian corpuscles and the splenic sinuses and trabeculæ. These facts bear out the time-honored theory that the spleen is the seat of malarial infection.

Early Differential Diagnosis of Typhoid Fever.

Major Frederick Smith, D.S.C., R.A.M.C., was awarded the Enno Sander Prize for his essay on this subject. He considered his subject under the following heads: Introductory; subjective early symptoms; objective symptoms; temperature as an aid in the diagnosis; typhus and relapsing fevers; tuberculosis, respiratory diseases and influenza, meningitis, septicemia, puerperal fever, pyemia, endocarditis, pericarditis, glanders; gastroenteritis, pericecal inflammation, dysentery; febricula; Malta fever; malarial fever; plague and other diseases mistaken for typhoid, and chemical reactions and microscopic methods in relation to the earliest stages of typhoid. He concludes that, in the field, the medical officer must rely mainly on his clinical acumen and summarizes his studies in that direction as follows: 1, There is scarcely any disease accompanied by fever which has not been at times mistaken for typhoid fever; 2, a good many cases are wrongly diagnosed owing to carelessness or to want of knowledge; 3, the disorders most liable to be confounded with typhoid fever are: Typhus fever, tuberculosis, pneumonia, influenza, febricula, or unnamed continued fever, Malta fever, malarial fever and paratyphoid; 4, it is frequently impossible by non-bacteriologic methods to differentiate between typhoid and the diseases named above in four days or even a week and more; 5, our safety, from a public health point of view, lies in regarding all doubtful cases as typhoid until they have been proven to be something else, and 6, the anomalous cases are more numerous and the difficulties in the way of diagnosis greater, in military than in civil life.

History, Cause and Mode of Transmission of Yellow Fever.

Lieut. James Carroll, U. S. A., presented an encyclopedic paper tracing yellow fever from its earliest historical appearance in Barbadoes in 1647 to the decline of the disease in Cuba in 1902. The author concludes that yellow fever is contracted only through the bite of infected mosquitoes twelve or more days after feeding on the patient in the earlier period of the disease. Experimentally, the disease can be produced by subcutaneous injection of blood or even of infiltrated blood serum of a patient, provided the material can be obtained sufficiently early in the attack.

The Treatment of Yellow Fever in Havana.

Col. William C. Gorgas, U. S. A., emphasized the desirability of receiving the patient during the first three days of the attack and of keeping him in the recumbent position absolutely without exertion. Food was prohibited during the active stage and milk was given when the temperature subsided unless contraindicated. Water and cracked ice were given ad libitum. Cathartics were employed as needed. Phenacetin was exhibited for headache and muscular pain. Saline enemata and local applications to the back were given for urinary suppression or diminution. The convulsions were due to toxemia rather than to uremia as had been previously supposed. Gastric hemorrhage was treated by cracked ice and rest, without astringents. This treatment, as compared to the use of drugs as employed by the Spanish physicians, was far more successful, as the mortality of the American Hospital was 12 per cent. less than that under the Spanish treatment.

Spinal Anesthesia in Military Surgery.

Lieut.-Colonel Augustin Aguirre of the Mexican Army presented an interesting report of the subarachnoid injection of hydrochlorid of cocain, according to the method of Tuffier, for which he claimed the following advantages: Ease of application; the surgeon is his own anesthetist; speedy action; absolute safety and a small, easily carried and readily sterilized armamentarium. The author reported 210 cases in which the drug had been employed.

Tropical Abscess of the Liver.

Lieut. E. W. Pinkham, late U. S. A., reported sixteen cases of hepatic abscess with seven recoveries, the high mortality being due to failure to recognize the condition sufficiently early. He observed that the so-called abscesses of the liver are not really abscesses nor are their contents pus; they are rather areas of necroses, liquefaction of liver tissues and are made up of liver cells in all stages of degeneration and disintegration, free fat globules, more or less of blood corpuscles, and serum. He commented on the freedom with which the liver may be examined without dangerous hemorrhage, and objected strongly to evacuation and drainage by the trocar or cannula, urging free incision.

Anterior Dislocation of the Shoulder.

Asst.-Surgeon General G. Tully Vaughan, U. S. P. H. and M.-H. S., recommends the following methods, in the order given, of the treatment of anterior dislocation of the shoulder: Direct reposition; extension and counter-extension; Kocher's method; and arthrotomy. He related a case in which all were successively employed. free opening finally showing that reduction had been provided by a detached greater tuberosity; reduction was then easily affected by pressure in the axilla with adduction of the arm.

The Interoceanic Canal.

The following resolutions, presented by Lieutenant-Colonel J. K. Weaver, N. G., Pa., were unanimously adopted:

Whereas, It is well known that the previous excavations for an Isthmian canal have been attended with a large amount of illness and a heavy mortality, due mainly to malaria and yellow fever: and

Whereas, Recent discoveries as to the cause of these diseases have enabled medical officers to control their ravages to a marked degree; and

Whereas, The success which has crowned medical efforts in Cuba, in abolishing yellow fever in the island, almost banishing malaria from Havana and entirely eradicating malaria as a factor of the death rate of the Army in Cuba, is conclusive evidence that if proper hygienic precautions are taken at Panama and other situations, along the route of the projected interoceanic canal, the death rate of the past can be diminished and practically made to disappear: therefore, be it

Resolved, That, in the judgment of the Association of Military Surgeons of the United States, in annual meeting assembled, the amplest power should be given to the medical officers in charge of the sanitation of the canal, and that, to attain this end, the medical officer in charge should be a member of the commission which the President of the United States is authorized to appoint to conduct the affairs of the canal; and be it further

Resolved, That the Secretary of the Association is instructed to forward this preamble and resolutions, properly attested, to the President of the United States.

Reorganization.

The Committee on Incorporation,, through its chairman, Major William C. Borden, U. S. A., announced that the association was incorporated by Act of Congress, approved Jan. 30, 1903. The association proceeded to reorganize under the law.

Election of Officers.

The following officers were elected for the ensuing year: President, Medical Director John C. Wise, U. S. Navy; vice-presidents, Surgeon-General Walter Wyman, U. S. P. H. and M.-H. S.; Major Albert H. Briggs, surgeon, N. G., N. Y.; Brigadier-General Robert M. O'Reilly, surgeon-general, U. S. Army; secretary and editor, Major James Evelyn Pilcher, U. S. Army, and treasurer, Major Herbert A. Arnold, surgeon, N. G., Pa. St. Louis was selected as the place of meeting for 1904.

Resolutions.

After the induction of the new officers, appreciative resolutions were unanimously adopted in acknowledgment of the courtesies of the citizens of Boston, including the Medical Library Association, Surgeon-General Blood, Captain Myles Standish, Lieutenant F. L. Gibson, Dr. Henry O. Marcy and the host of hospitable and generous people who had contributed so freely to the entertainment of the association.

NEW YORK STATE MEDICAL ASSOCIATION.

Nineteenth Annual Meeting of the Fifth District Branch, held in New York City, May 19, 1903.

The President, Parker Syms, M.D., in the Chair.

Symposium on Malaria.

Dr. W. N. Berkeley opened this symposium with a paper in which he described the three species of anopheles mosquito, and insisted that drainage was the only permanently effective remedy against these pests.

Laboratory Diagnosis and Life Cycle of the Parasite of Malaria.

Dr. W. T. Klein described the various stages observed in the malarial plasmodium during the endogenous cycle in the human being, and said that the plasmodium was very rarely found free in the blood plasma. The breaking up of the segmenting body and the liberation of the spores were coincident with the rigor. The cycle was completed approximately in forty-eight hours in the tertian variety. The quartan ring was slightly smaller than the tertian, and its pigment granules were smaller and more numerous. Its cycle was completed in 72 hours. The estivo-autumnal form was also smaller and more delicate than the tertian, and it presented two types, one having a cycle of 24, and another a cycle of 48 hours. The parasite of malaria was transferred to man by the bite of the mosquito, and, if the inoculation were successful, which was by no means always the case, malaria usually developed in eight or ten days. Either a dry or a fresh specimen of blood could be made use of for diagnostic purposes, but, whenever possible, it should be taken about eight hours after the chill, because just prior to the occurrence of the chill the malarial plasmodia showed a tendency to retire from the peripheral circulation to the internal organs. A one-twelfth inch oil immersion lens was required for the examination, and a large experience in this field of work had taught him that preference should be given to Goldhorn's staining method, not only because the fixing and staining process could be done in about one minute, but because the chromatin granules were so brilliantly stained as to materially aid in the diagnosis. A marked diminution in the number of red blood corpuscles and in the hemoglobin was a constant occurrence in malaria, and an absence of leucocytosis was likewise a characteristic feature. This was an important point in the differential diagnosis of malaria.

The Concurrence of Anopheles Mosquitoes and Malaria.

Mr. Henry Clay Weeks, engineer in economics, discussed this topic. He deplored the prevalent tendency of the people of a malarial region to conceal the true facts, and their dread of taking an active interest in the work of exterminating the disease lest by so doing the locality might get a bad name. It was far better for all concerned to face the truth, and take steps toward the banishment of such a public disgrace. He called attention to a fact often overlooked even by medical men, i. e., that the larvæ of the anopheles are found much later in the season than those of the ordinary mosquito.

Clinical Diagnosis and Treatment of Malaria.

Dr. Alexander Lambert discussed this phase of the subject. He pointed out that while there were occasional mild cases of malaria in which the attacks only lasted four to six hours, true malaria was generally distinguished from other diseases characterized by chills by the fact that ten or twelve hours were required for the complete cycle. Another distinguishing point was that in malaria, as seen in this part of the world, the pulse did not rise in proportion to the temperature, a temperature of 104 F. often being associated with a pulse rate of less than 100. He quoted Captain Delaney of Calcutta, who had had a very large experience with malaria in that region, as saying that a justifiable diagnosis of malaria was possible in over 90 per cent. of the cases by means of a differential count of the leucocytes. If the large mononuclear leucocytes, i. e., those mononuclear cells which were as large as the polynuclear ones, constituted over 12 per cent., one was warranted in making the diagnosis of malaria. In differentiating malaria from tuberculosis, it should be remembered that in the early stages of the latter disease the temperature usually ranged between 97 and 100 F. In sepsis the febrile and sweating stages were of comparatively short duration and recurred at irregular intervals. In cholelithiasis there was a remittent form. In yellow fever there was a falling pulse, with a stationary or rising temperature. It was often very difficult to distinguish between estivo-autumnal malaria and typhoid fever, but the temperature curve, the history and the other symptoms would usually suffice for such differentiation. The enlargement of the spleen did not occur as early in typhoid as in malaria. The diazo-reaction in the urine in the early days of typhoid was often of assistance. In this latitude many mistakes in diagnosis would be avoided if it were made the rule to exclude malaria, unless the plasmodium were found in the blood. The speaker said that, in his experience, Manson's method of treatment had proved uniformly successful. It is carried out as follows: Five grains of quinin are given every four hours until the temperature returned to the normal, and then three grains should be given three times daily. At the same time the patient should take daily a drink made by cutting up the rind, pulp and seeds of a lemon, placing them in one quart of cold water and boiling this down to one pint. This drink should be taken daily for four months. It should be strained before taking, and could be sweetened as desired. After three weeks the patient should take a calomel purge, and then three grains of quinin three times daily for one week. This week of medication should be repeated at the end of the month, and at intervals of a month thereafter for four or five months. The hydrochlorate of quinin contained more of the alkaloid and was more soluble than the ordinary sulphate of quinin.

Dr. Francis P. Kinnicutt did not think that clinical experience had proved this treatment of Manson to be so effective as that of Ross, which was as follows: Ten grains of quinin are given every two hours for the first fortnight, 15 grains daily for the next fortnight, ten grains for the second month, 5 grains for the third month. The dose should be increased from five to ten grains at first twice a week, and later at weekly intervals. The treatment should be invariably continued for four months, even though no relapse occurred. Where a person was unavoidably exposed to infection, an excellent prophylactic treatment consisted in taking five grains of quinin daily, increasing the dose to ten grains twice a week.

Dr. David P. Austin called attention to the strong tendency to relapses at intervals of a week for the first month, as well as to the value of combining quinin with calomel and capsicum.

Dr. W. I. Cocke of Port Washington, L. I., described his favorable experience with nuclein in the treatment of malaria.

Officers Elected.

The following officers were elected: President, Dr. J. C. Bierwirth, Brooklyn; vice-president, Dr. Milton C. Conner, Middletown; secretary, Dr. E. V. Hubbard, New York City; treasurer, Dr. Henry Dodin, New York City.

GERMAN CONGRESS OF SURGERY.

The thirty-second annual congress of German surgeons was held at Berlin, June 3 to 6, and a number of interesting communications were presented. Prof. G. Gaertner, Vienna, inventor of the "tonometer," exhibited a somewhat similar instrument for watching the pulse during narcosis. It is worn on the wrist like a bracelet, and an index registers the pulse on a large dial. Narath, Utrecht, presented a "gastrophor," a device to aid in operations on the stomach and to dispense with an assistant. An exposition of surgical appliances contained the new instruments, nearly all of which seem to have been described in The Journal during the last year. Kraske, Freiburg, expatiated on the

Dangers of Raising the Pelvis

in operating, and cited several instances from his own experience in which the Trendelenburg position had entailed fatal consequences. Paralysis of the anterior tibial nerve and emphysema of the abdominal walls are not serious and can be avoided. He refers more particularly to the disturbances in the circulation in obese subjects. In two patients of this group, with signs of myocarditis, an operation on the bladder under ether was followed by heart failure the next or the fifth day. He thinks that this fatal result was due to the increased blood pressure and consequent dilatation of the heart. In three cases occlusion of the intestines followed a laparotomy with the pelvis raised. One patient spontaneously recovered after five days of ileus. In another, a still more tempestuous case, the entire omentum was found rolled up under the liver, the colon adherent to it, and completely occluded. The conditions were relieved by a laparotomy, but the patient soon succumbed. Schauta has reported two cases of torsion of the small intestine in consequence of the Trendelenburg position, and insists that the viscera should all be carefully restored to their normal places before closing the abdomen. In a third case the raising of the pelvis caused severe post-operative hematemesis. Trendelenburg, Leipsic, in the discussion that followed, called attention to still another danger, suffocation from aspiration of vomited matters when the stomach is not empty as the operation is commenced. He has lost a patient from this cause. König, Berlin, warned against the slanting position in operating on intraperitoneal abscesses for fear that some of the contents may escape into the upper parts of the abdominal cavity.

Küttner, Tübingen, proclaimed that he had saved laboratory animals, otherwise doomed, by intravenous injection of a saturated

Oxygenated Saline Solution,

and exhibited an apparatus he had devised for the purpose. He found inhalation of oxygen under pressure an effective measure, especially when combined with the intravenous injections.

Massage in Recent Fractures.

Jordan, Heidelberg, has found in 100 cases that early massage and application of a splint after each massaging resulted in more rapid and better functional and anatomic cures than he had ever attained by other measures. Even when immobilization is necessary, it should always be preceded by massage, and be restricted to the minimum.

Cancer in Digestive Tract.

Petersen, Heidelberg, affirmed that cancer in the rectum has a tendency to bore into the depths, while gastric cancer spreads by predilection on the mucosa, and is shallower. He also claims that some of the cancer cells are destroyed in the lymph glands. He makes a practice of extensive resection of the stomach but does not think it necessary to remove all the glands in the region. In 30 cases of resection of the stomach at Heidelberg, on account of cancer, 7 of the 18 who survived the intervention are still alive.

Paraffin Prothesis for Hernias.

Eckstein, Berlin, advocated treating inguinal and umbilical hernia by this means, but Gersuny, the inventor of the measure, emphatically denounced this application of it. The hernia is not cured, but merely concealed behind the paraffin. Others, however, have been successful with it, injecting paraffin with a melting point of 40 C. into the hernia sac after reduction of its contents.

Operative Treatment of Epilepsy.

Kümmell, Hamburg, stated that he had treated 30 cases of epilepsy by Kocher's method of draining the ventricle. The epilepsy vanished as long as the drainage continued; but returned as soon as it was suspended.

Esthetic Ablation of Lymphomata in Neck.

Dollinger, Budapest, has been very successful in removing these tumors without a scar or recurrence. He works through an incision in the edge of the hair, and has even succeeded in removing supraclavicular ganglia by this route. Out of 128 operations of this kind there was slight post-operative suppuration in only 21, and it was not tuberculous, and healed as soon as a small drain was introduced at a counter-opening. There has been recurrence in only 2 of the entire number.

Suture of the Heart.

Four surgeons reported direct suture of the heart, one having done it in 3 cases. All of the 6 patients recovered except 2, and Rehn mentioned that his patient operated on six years ago is in good health to-day.

Treatment of Cavernous Angioma with Magnesium Darts.

Payr, Gratz, reported that a cavernous angioma on the cheek was very much reduced in size by his method of introducing magnesium darts. He inserted 42 in six sittings. The little darts are soon absorbed, but they induce the formation of compact connective tissue with thrombosis and obliteration of the spaces. The vascular tumor is thus reduced to an insignificant size, or its extirpation is rendered easy without fear of hemorrhage. He has thus treated 8 or 9 cases with complete success.

Recovery After Impalement.

Franke, Brunswick, described a remarkable case of complete transverse perforation of the thorax. A woman fell from a height on a broom handle, which entered at the right axilla and emerged in the other. He saw the patient soon after the accident, and found considerable emphysema of the subcutaneous tissue, progressive dyspnea, a wound in the right axilla and a very tender point in the left axilla, the region which seemed to be the starting point for the emphysema. He had the patient taken to his ward at once and made an incision in the left axilla through which he could palpate with his fingers a perforation of the thorax wall in the third interspace. The lung had evidently retracted from the thorax wall, and in order to avoid pneumothorax he tamponed the wound at once. He then inspected the right axilla, and found here likewise a perforation of the third interspace, and he tamponed this also. The patient had quite recovered in fifteen days. He adds that the blood stains on the broom handle corresponded exactly with the transverse diameter of the thorax. It must have pushed back the heart and lungs without injuring them.

The *Semaine Médicale* of June 10 and 17 contains an elaborate report of the congress. Most of our German exchanges are publishing the "collective report" in installments.

MONTANA MEDICAL ASSOCIATION.

Twenty-fourth Annual Meeting, held at Helena, June 17 and 18, 1903.

Dr. T. J. McKenzie, Anaconda, President, in the Chair.

An address of welcome was delivered by Mayor Frank J. Edwards of Helena, which was fittingly responded to by the president of the association. After roll-call and the admission of sixteen new members, a good scientific program was taken up and discussed.

The following officers were elected for the ensuing year: President, Dr. Louis Bernheim, Butte; vice-presidents, Drs. Donald Campbell Butte; George H. Barbour, Helena, and E. F. Conyngham, Phillipsburg; secretary, Dr. Ben C. Brooke, Helena; treasurer, Dr. Isadore D. Freund, Butte; councilors, Drs. Thomas J. Murray, Butte; G. T. McCullough, Missoula; T. J. McKenzie, Anaconda; Ernest Crutcher, Great Falls; Charles F. Hopkins, Chinook; W. B. Kingsbury, Dillon; William C. Riddell, Helena; Alexander D. McDonald, Kalispell; Robert D. Dalton, Livingston, and James Chapple, Billings. The next meeting of the association will be held at Butte on the second Wednesday and Thursday of May, 1904.

Dr. John A. Donovan, Butte, introduced the following resolution, which was adopted:

Resolved, That the Medical Association of Montana approves the plan of examination of eyes and ears of all school children as recommended and practiced by the Illinois State Board of Health and approved by the American Medical Association and many other organizations. That we recommend said plan to our state board of health and board of education for their approval and action. That hereafter every child will be carefully examined by the teacher at least once a year and records made according to the prescribed simple forms printed for this purpose. That the parents of any child who is found defective in sight or hearing be notified, that said parents may act as they see fit.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the disease seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Sulpho-Carbolate of Zinc in Cholera Infantum.

Dr. W. F. Waugh, in the July number of *Alkaloidal Clinic,* recommends sulphocarbolate of zinc in infantile summer diarrhea and in cholera infantum. His routine treatment is to clear out the bowels with castor oil, calomel, mercury and chalk, aromatic rhubarb, lavage or colonic flushing as seems best in each case. This is followed by the zinc salts every hour in 1/6 to 2 gr. doses. It is given in solution or powder form, and, in cases of decided irritability, combined with pepsin and bismuth. When there is extreme acidity marked by rectal excoriation, sulphocarbolate of sodium is substituted.

Diarrhea.

The *Jour. of Tropical Med.* quotes the following combinations in the treatment of diarrhea:

℞.	Tinct. camphoræ	ʒi	4	
	Tinct. capsici	ʒss	2	
	Tinct. lavendulæ co.	ʒii	8	
	Spts. vini gallici q. s. ad	℥ii	60	

M. Sig.: One teaspoonful every two or three hours.

In the treatment of chronic summer diarrhea the following combinations are recommended:

℞.	Bismuthi subgal.	gr. xxiv	1	60
	Pulv. opii	gr. ss		03
	Pepsini pulv.	gr. vi		40

M. Ft. chart. No. xii. Sig.: One every four hours, alternating with the following:

℞.	Hydrarg. chloridi mitis	gr. ss		03
	Cerii oxalatis	gr. ii		12
	Sacch. albi q. s.			

M. Ft. chart. No. xii. Sig.: One every four hours.

Pustular Acne of the Face.

According to Leredde, in an abstract in *Amer. Med.*, an acne developing on a sensitive skin, as in women, should not be confounded with an acne developing on a thick skin, which is but slightly sensitive, when the treatment is being considered. He regards sulphur as the best remedy, but its action depends not so much on any special property of the sulphur as on the excipient combined with it. He, therefore, makes two classifications of excipients: First, those that tend to congest the skin, obliterate the glands, and prevent cutaneous perspiration. (In this class he includes the fats.) Second, the agents, which decongest the skin and facilitate cutaneous perspiration, such as powders and pastes. The latter are employed when the skin is sensitive.

The following combinations may be of service:

℞.	Sulphuris precip.	ʒv	20	
	Saponis nigri	ʒiiss	10	
	Acidi pyrogallici	ʒi	4	
	Zinci oxidi	℥i	30	
	Liq. petrolati	℥iii	90	

M. Sig.: Apply locally at night.

The parts should be washed thoroughly with salicylated soap before applying the ointment. If the skin is hard, the paste may be left on over night and removed the next morning. In women the paste should be removed at the end of two hours. According to the author, larger amounts of the sulphur can be used, and are borne better when prescribed as a paste than when prescribed with simple fat.

When the skin is not sensitive the following ointment may be employed:

℞.	Sulphuris precip.	ʒi	4	
	Hydrarg. chloridi mitis	ʒss	2	
	Lanolini	ʒv	20	
	Liq. petrolati	℥iiss	75	

M. Ft. unguentum. Sig.: To be applied locally.

The general condition of the patient must be carefully inquired into and properly corrected if possible. Especially must gastric disturbance be avoided.

Neurasthenia.

The following combinations are of value in the treatment of neurasthenia:

℞.	Ferri glycerophosphatis			
	Sodii glycerophosphatis, āā	ʒi	4	
	Berberinæ phos.	gr. xii		75

M. Ft. capsulæ No. xxiv. Sig.: One capsule before each meal.

When pronounced anemia is present the following combination containing arsenic and iron should be prescribed:

℞.	Acidi arsenosi	gr. 2/3		04
	Ferri sulphatis	ʒi	4	
	Ext. nucis vomicæ	gr. vi		40
	Potassii carbonatis	ʒi	4	

M. Ft. capsulæ No. xxiv.

The lecithin preparations, made from the yolk of the egg, are regarded by some as exerting specific action in this disorder. It may be prescribed in one of the following forms:

℞.	Glycerol lecithin	℥ii	60	

Sig.: One-half teaspoonful after each meal, gradually increased to one teaspoonful three times a day: or;

℞.	Pil. ovo-lecithin ana	gr. iii		20

No. xxiv. Sig.: One pill three times a day after each meal.

Phosphorus combined with zinc makes a good combination to be used in some cases:

℞.	Phosphori	gr. ss		03
	Zinci valerianatis	ʒi	4	

M. Ft. pil. No. xxx. Sig.: One pill after each meal. If the patient suffers from insomnia the following should be given at bedtime:

℞.	Sodii bromidi	ʒv	20	
	Tinct. hyoscyami	ʒiv	15	
	Elix. simplicis q. s. ad	℥ii	60	

M. Sig.: One teaspoonful at bedtime, for sleep, and repeat in one hour if necessary.

It must not be forgotten that autointoxication is present as a causative or aiding factor in many of these neurasthenic cases. Consequently the alimentary tract must receive proper attention by keeping the bowels freely open, either with saline purgatives or small and repeated doses of calomel. Intestinal antiseptics are valuable, such as salol, thymol or creosote in small doses. Hydrotherapy, prescribed to suit the individual case, is indicated. It may be administered in the form of baths, douches or sprays.

Medicolegal.

Liability of Company for Malpractice After Fraud.—The Court of Civil Appeals of Texas holds, in Jones vs. Railway Company, an action brought to recover for personal injuries received by the wife of the party suing, that oral evidence would be admissible to show that, as an inducement for the party suing to execute a release to the company, the latter undertook to have his wife further treated by its physicians and to pay her board bill. If the company furnished medical treatment to the wife in consideration of the execution of the release, it would be liable for unskilful treatment, although the release should be set aside on account of fraud in its procurement.

Five Thousand Dollars for Injury to Spine.—The case of Sweeney vs. The New York Central & Hudson River Railroad Company was brought by a young woman who was at the time of the trial 22 years of age to recover for alleged permanent injuries to her spine. The extent of her injuries was a sharply contested point. Several witnesses beside the woman herself, and including two physicians, were sworn to sustain the contention that such injuries were very severe. On the other hand, evidence was given in behalf of the company to the effect that her claims in reference thereto were greatly exaggerated. Under these circumstances the Fourth Appellate Division of the Supreme Court of New York does not feel that the evidence warranted it in disturbing a verdict in her favor or feel willing to say that one for five thousand dollars was excessive.

Cases of Privilege.—The Second Appellate Division of the Supreme Court of New York says, in the case of Duggan vs. Phelps, that it is held that what is seen by a physician in looking at the patient is within the privilege (Grattan vs. Metropolitan Life Ins. Co., 92 N. Y., 274); that it is not necessary that the physician should be employed by the patient, or that there should be a contract relation between them (Renihan vs. Dennin, 103 N. Y., 573); that the party suing, by calling his physician to testify as to his disease and its treatment, does not waive his objection to the evidence of other physicians who had treated him at other periods (Hope vs. Troy & Lansingburgh Railroad Company, 40 Hun., 438, affirmed in 110 N. Y., 643); and that although a patient gives evidence as to his condition both before his entrance to a hospital and after he leaves it, he does not waive the privilege as to a physician who treated him in that interim (Barker vs. Cunard Steamship Company, 91 Hun., 495, affirmed in 157 N. Y., 693). In the present case, the party suing for damages for personal injuries testified that after the accident he was taken in an ambulance to a hospital; that he left there the next day, and was thereafter treated at home by his own physician, who testified in detail as to the injuries and the treatment. The other party called the ambulance surgeon, who had charge of the party suing and treated him in the hospital. The court holds that the calling of his own physician as a witness was not a waiver of privilege as to the ambulance surgeon. It distinguishes the case from Green vs. Metropolitan Street Railway Company (171 N. Y., 201, page 45 of The Journal of July 5, 1902), and Griffiths vs. same company (171 N. Y., 106, page 103 of The Journal of July 12, 1902), by the fact that the ambulance surgeon testified that he had charge of the party suing, and recalled what he did for him, and that he treated him after he came to the hospital, after which he was asked to state his condition at the time that he "first saw him, that he treated him." It says he was therefore asked to speak in the relation of physician to patient.

What Deemed a Bodily Infirmity—Pension as Evidence.—The United States Circuit Court of Appeals, Third Circuit, holds, in the case of Black vs. the Travelers' Insurance Company, that an infirmity of the body, as the term implies, is something that materially impairs the bodily powers. In a case where this is clearly made out, it is no doubt the duty of the court to take the question from the jury and dispose of it; but ordinarily it is for them to pass on. For example, in this case an applicant for insurance warranted that he had never had "any bodily or mental infirmity." It was proved, however, that while a soldier in the Civil War he received a gunshot wound in the back of the head, by which the external table of the skull was fractured, a piece about half an inch square taken out, and a slight depression of the inner table produced. On the strength of this, in December, 1868, he was granted a pension by the United States government of $8 a month, which was increased to $12 in July, 1886, and in December, 1889, to $14 on account of alleged resulting vertigo and impaired vision. But, aside from the pension record, there was nothing to show that the wound, which healed over quite speedily, materially affected the general health of the insured, which, according to the testimony of several witnesses, was uniformly good; and the court holds that the question of whether the condition produced by the wound was a bodily infirmity within the warranty, and constituted a breach of it, should have been left to the jury. In other words, it holds that an injury or infirmity, the existence of which constitutes a breach of such a warranty, must be such as amounts to an actual inroad on the physical health or condition of the insured, and that this, as a rule, is a question for the jury. The mere reception of a pension, it holds, did not establish that he was affected with a bodily infirmity, but only that it had been so represented by him to the pension department. However far in that direction this may have gone it was not conclusive on the question of the existence of a disability regardless of the other proofs. Even on the most disadvantageous showing it amounted to no more than a declaration or statement by the insured, which, like any other, it was for the jury to consider and pass on along with the other evidence.

Prescriptions Under Local Option Law.—By the Texas constitution the legislature is required to pass a "local option law," which is restricted to a prohibition of the sale of intoxicants. Article 405 of the penal code, in substance, prescribes the punishment against all parties who undertake to give prescriptions in local option territory, except regular, practicing physicians, and against them if they should give prescriptions without a personal examination of the applicant, which personal examination must disclose the fact that the applicant is sick. But the Court of Criminal Appeals of Texas holds, in Stephen vs. State, that the legislature has no authority to punish a party for giving a prescription to himself. No more could he be punished for giving a prescription to a third party. The legislature has not been authorized by the constitution to prohibit the giving of prescriptions. This is not a sale, nor can it be tortured into a sale. It may be admitted that it contemplates the purchase of the intoxicant, but it is not a purchase or a sale. The information in this case did not charge a sale. It simply charged the giving of a prescription for the purpose of obtaining intoxicants. That a physician may be guilty of violating the local option law by means of giving a prescription may be conceded, though it would not be for giving a prescription, but for bringing about the illegal sale. Cases can be well imagined and readily conceived where a physician, for the purpose of assisting the seller in making the sale, would become particeps criminis in the sale. Or if the physician, without connivance or complicity of the seller, should, by means of a prescription, or any other means, use the seller as an innocent instrument in violating the local option law in the sale, then he (the giver of the prescription) would be guilty under the statute. In such instances he would, were the case a felony, bear the relation of an accomplice to the crime, but, being a misdemeanor, he would be a principal. But there must be a sale alleged and proved in order to make a violation of the local option law. The court adds that it is not discussing what it would take to constitute a sale, but only holds that a party can not be convicted of violating the local option law until he has been instrumental criminally in bringing about a sale of the intoxicants within the prohibited territory This must be alleged And it holds that the information in this case did not charge an offense

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Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below

Medical Record, New York

June 27

1 *On Septic Thrombosis of the Roots of the Portal Vein in Appendicitis and on Pylephlebitis Together with Some Remarks on 'Peritoneal Sepsis' Arpad G Gerster
2 The Late Dr T Gaillard Thomas Henry D Nicoll
3 *A New Blood Stain George L Laporte
4 *Feeding of Older Infants and Children W M Hartshorn

1—See abstract in The Journal, xl, p 1595

3 **A New Blood Stain**—Laporte describes his method of staining as follows

First, make a 5 per cent solution of Jenner's powder (Gruebler's) in methylic alcohol Merck's highest purity) Do not filter this solution Second make a solution of one part Unna's polychrome methylene blue solution (Gruebler's) to 150 parts of distilled water (about 2 drops to 15 c c) Then proceed as follows: Take the cover glass specimen in a Cornet forceps drop on it 5 drops of Jenner stain allow this to act one minute, then without removing the Jenner stain, pour on 10 drops of the dilute polychrome methylene blue solution Agitate the forceps so as to produce a thorough mixing of both solutions on the cover glass Allow the combined stain to act five minutes longer Then wash off with distilled water and allow some of this to rest on the cover glass about one minute longer with occasional agitation of the forceps At the end of this time dip the specimen rapidly into a very dilute acetic acid solution (about 1 drop of 50 per cent acetic acid to 10 ounces of water) until it is of a reddish or pinkish color Rinse again with water and dry in the air Do not employ heat or filter paper to dry specimen

This stains red blood corpuscles a distinct pale rose color The nuclei of the white as well as of the red cells are of a bright carmine purple and the eosinophile granules are of a bright coppery red, the mastzellen granules of a very deep metachromatic blue The protoplasm of the large and small lymphocytes is a pale light blue dotted here and there with bright purplish chromatin granules The network of the blood plates takes the carmine purple chromatin color the bodies of the blood plates staining a light blue The body of the malarial parasite is stained blue, its chromatin the same as the nuclei of the white cells, only brighter Granular degeneration of the red cells appears as fine blue specks in the affected cells A few minor details must be observed The specimens should not be fixed in any way and should not be too old The time given for the Jenner (one minute) and the combined stain (5 minutes) should ordinarily be strictly adhered to There should always be double the number of drops of dilute polychrome methylene blue solution to the three or four drops of the Jenner solution The former should not be added drop by drop, and it is always necessary that the distilled water should be left on the cover glass a minute longer after rinsing off the stain

4 **Infant Feeding.**—All infants over seven months old, artificially fed in the Nursery and Child's Hospital, New York, during the past four months were given stronger food, especially stale bread, soaked in boiling water until thoroughly softened, when the water was poured off and a cup of milk added, and this boiled for three or four minutes After being sweetened and cooled sufficiently, it is fed to the baby. At first a teaspoonful once a day is given, but as the infant becomes accustomed to it, the amount is increased so that at the end of ten days it is receiving one to two or three ounces daily. It is given between the regular bottle hours, and never more than half an ounce at a time If curds appear in the stools or if it disagrees, it is discontinued and castor oil or calomel given Older children ranging from eighteen months to four years, are all fed on plain bread and milk, with no extra preparation, at least once a day. In the morning they receive farina with milk. At noon boiled rice, with meat broth poured over it, is given to them. For supper they receive plain bread and milk, the older children often receiving some plain jelly spread over their bread. During the fruit season they are allowed an orange or some easily digested fruit at noon Since they have been giving this extra food for the younger children and infants Hartshorn says they have noticed a marked change in the general appearance of the weight charts for the better.

American Medicine, Philadelphia

June 27

5 *The Relation of Neuralgic Headaches to Storms S Weir Mitchell
6 A Case of Endothelioma of the Mammary Gland J. Chalmers DaCosta
7 *Erythropleum. A Clinical Study Reynold W Wilcox
8 *Chronic Cyanotic Polycythemia, with Notes on Two Cases J N Hall
9 *A Further Study of the Influence of the Contents of the Large Intestine on Strychnin William Salant
10 *A Rapid and Easy Method for the Sterilization of Catgut Ligature and Suture Material John Milton Garratt.

5. **Neuralgia and the Weather**—Mitchell calls attention to his earlier work, and that of others on the influence of the weather on pain He remarks that eyestrain is rarely the primary trouble; it may lead up to or exaggerate the force of the attacks, but atmospheric conditions have a potent share in the production of migraine He has been able at different times to convince himself that certain migraines were due to storms, but not, as a rule, to the summer electric storms, which may, nevertheless, in some hysterical women occasion a general headache, distinct in character from hemicranial attacks He briefly reports a case and gives the curve showing the monthly average of headaches for seven years in connection with the storm curve, which are strikingly parallel

7 **Erythropleum.**—This substance, which is the bark of a tree, the Erythroploeum guineense, one of the Leguminosæ and known in Africa as the gidu, mancona, doom, ordeal, casca, saucy and sassy bark. Its mode of action is that of a muscle-poison, acting on the heart earlier because it receives a larger quantity of poisoned blood. On the vagus its action resembles digitalis. It is a vasoconstrictor by acting on the vessels themselves, the vasomotor nerves or on some vasomotor center not contained in the medulla The respiration is influenced through the pulmonary branches of the vagus It is an irritant to the nasal mucous membrane, causes vomiting by reason of its solutions possessing the same property, and is diuretic like digitalis. He gives the result of its use clinically where its field of use seems limited to the heart and blood vessels when cardiac disease is not accompanied by dropsy. Its power to slow the heart is rather greater than that of digitalis, but it is more decidedly a gastric irritant Its vasoconstrictor properties are practically those of digitalis and ergot combined. Its cumulative power is rather less than that of digitalis. The indications for the use of the remedy are those which Withering laid down in the eighteenth century for digitalis, namely, a rapid, low tension pulse with venous congestion Digitalis, however, is rather more reliable and constant. The use of this remedy should be confined to those cases of fairly competent heart of low vascular tension in which it will show its effects more rapidly and markedly, and to those cases in which digitalis has lost its usefulness or has utterly failed.

8 **Chronic Cyanotic Polycythemia.**—This title is offered as a tentative designation for certain cases recently reported of chronic cyanosis with immense increase in the number of red cells and without cardiac disease. Two cases observed by Hall are reported, in one of which there was a well-defined chronic nephritis with cardiac manifestations A striking characteristic is the intense cyanosis, giving the lips and tongue the color of ripe Concord grapes This is somewhat less marked on the hands and still less on the trunk and lower extremities. The dyspnea and palpitation that existed were more striking than in the other cases quoted He accounts for them by insufficient oxygenation in spite of the increased number of red cells He thinks it is possible that the increase in the reds is a compensatory process—an attempt to make up the deficiency in oxygen carrying capacity in individual cells by an increase in their number

9. Strychnia.—Salant has investigated the action of the contents of the large intestine on strychnia, and finds that the simpler methods for the detection of strychnia are more certain in its detection. He accounts for this by the manipulations that are required by the more complex tests and reagents, some of them carrying off portions of the strychnin.

10. Catgut Sterilization.—The technic of the method employed by Garratt is given by him as follows:

Have ready one two-quart and one one-quart clean fruit jar for each size of the material used. It is well to have an extra one-quart jar for use in preparing a fresh batch when one on hand is nearly used. The jars must be thoroughly cleaned beforehand and sterilized by boiling or dry heat. The various sizes of catgut can be purchased from any reliable firm dealing in surgical supplies. The sizes found most convenient are 00, 0, 1, 2 and 3. The first three sizes are cut into lengths of about ten inches and used for ligatures and sutures; the last two, 20 inches—used for pedicles, etc. For convenience, a piece of wood 10x3x¼ inches is obtained, and both ends cut to a point and notched at intervals of one-quarter of an inch for catching the ends of the strands. After winding lengthwise, cut the smaller sizes at both ends of the board; the larger at one end only. Three strands of a similar size of the short lengths are placed in an envelope of unglazed paper, a convenient size being 3x1¾ inches. Two strands of a similar size of long lengths are likewise placed in envelope. Seal and mark with an indelible pencil the size number on the outside of the envelope. The number should be made large enough to be plainly seen. It does away with the necessity of putting germ-catchers on the outside of the jar. Envelope and contents of similar size are kept in a two-quart jar until wanted. Sterilization is accomplished by placing 40 or 50 envelopes and contents in a one-quart jar and completely filling it with the following germicidal solution:

Mercuric chlorid	gr. xv	1	
Tartaric acid	gr. lxxv	5	5
Columbian spirits			
Ether, āā	1 pint	473	

Put on the cover and screw it down tightly. Allow size 00 to remain in the solution for four hours; size 0, six hours; size 1, eight hours; size 3, twelve hours. After the material has been immersed for the desired time, pour off the solution and drain, then cover envelopes and contents with columbian spirits, screw on the cover, and put away in a clean place until wanted. It is essential that columbian spirits be used. Ethyl alcohol can not take its place, even when the absolute alcohol is used. Columbian spirits is a pure methyl (wood) alcohol practically free from water. It is inexpensive, costing less than the ordinary alcohol. It can be obtained usually at paint stores. It serves to toughen the catgut, acting much the same way as does formalin. In removing the envelopes from the jar use a pair of vulsella forceps kept expressly for this purpose. Thread the needles, then place in recently distilled water. Catgut prepared by this method possesses all the requisites of a good ligature and suture material—strength, pliability, and most important, asepsis. The technic of sterilization is easy to carry out, and it is inexpensive. The very minute quantity of mercuric chlorid remaining in the material overcomes the theoretic objections to its use.

He also remarks on the possibility of infection of cocain solutions, and at the suggestion of Dr. Lee H. Smith makes the solutions up from the dry ingredients, placing them in glass-stoppered one-dram bottles. Just before operation the bottle is filled with a boiling decinormal salt solution. When a bloodless field of operation is desired a 1 to 10,000 solution of adrenalin chlorid is used in its place, the nitroglycerin being omitted. The small bottles are kept in a specimen jar tightly covered until wanted. Since using this solution and the catgut ligature and suture material prepared as above, some 200 operations have been performed without a single suppuration.

Medical News, New York.

June 27.

11 *Poisoning by Corrosives. Eli H. Long.
12 *Appendicostomy (Weir) for the Treatment of Chronic Ulcerous Colitis. Willy Meyer.
13 *Note on a Case of Mycosis Vaginæ. Allen J. Smith and O. H. Radkey.
14 Cast from a Case of Membranous Croup. Everett J. Brown.
15 Report of a Case of Rupture of the Uterus; Laparotomy; Recovery. Nutting Fraser.
16 Neuritis Following Ludwig's Angina; Report of Case. Charles J. Aldrich.
17 Report of a Case of Stammering, and Method of Treatment. James M. Brown.

11. Corrosive Poisoning.—Long discusses the corrosive poisons, and insists particularly on the chemical basis of their action and the selection of antidotes on the same basis. He would also first insist on the importance of immediate dilution of the poison with a large quantity of water, independent of the nature of the corrosive. This is always practicable.

12. Appendicostomy (Weir).—A case of this new operation is reported by Meyer, where a soft rubber tube was passed through the appendix and the bowel regularly flushed with nitrate of silver solutions to treat the ulcerations that existed throughout the entire course of the transverse and ascending colon. Under the treatment the health of the patient has materially improved, though there is still some ulceration in the rectum. She has gained over 15 pounds. The cut end of the appendix is flush with the skin, and there is no granulating surface requiring dressing and no leakage whatever on removal of the tube. There is a little appendicular fistula which acts exactly like the artificial openings made by Kader's and Witzel's methods, contracting rapidly when the tube is removed. Once when flushing was done every other day the tube accidently slipped out, and at the next dressing the appendix was so contracted that it took long and tedious work to reintroduce the tube, thus showing that all that is needed to close the opening is to leave out the tube. If this does not promptly follow, cauterization with Paquelin's cautery will surely accomplish the desired result. Dr. Meyer has little fear of inflammation being set up in the misplaced appendix. It is, as it were, hung up with natural drainage into the cecum. Should it really become inflamed it would be of little consequence as it passes through the abdominal wall in all its length, where it can do no harm, the peritoneal cavity having been long shut off by adhesions. He suggests that this method of using the appendix might be of value in some cases of cancerous stricture. The appendix might be pulled forward tō relieve the distended intestinal tract, and stitched into the wound and made use of as indicated. It is probable, of course, that we may rarely meet old patients with an appendix of a caliber sufficiently large to carry out this plan. Still he intends to try it in his next case of obstructive ileus in an old and weakened patient. He thinks the operation is a valuable addition to our operative methods.

13. Mycosis Vaginae.—In the patient here described there was intense leucorrhea with vulvar burning and pruritus. Direct examination showed the presence of follicular vulvitis and at a later attack the walls of the vagina were found covered with great numbers of grayish brown, slightly elevated masses, easily detachable, with raw surfaces under them. Examination revealed the presence of fungi, Oidium albicans or thrush fungus. The authors review the papers on the subject, and think that in view of the absence of the subject in American text-books (definite recognition of the condition has been found only in Reed's work) that a report of the case is justified.

New York Medical Journal and Philadelphia Medical Journal (Consolidated).

June 27.

18 *Gonorrhea Insontium, Especially in Relation to Marriage. (To be concluded.) Prince A. Morrow.
19 *State Care of the Feeble-minded. Martin W. Barr.
20 Interstitial or Tubouterine Gestation Complicating Uterine Pregnancy, Abortion of Both Fetuses Three Weeks Apart. J. B. Morrison.
21 *The Ignition of Ether Vapor in Presence of a Closed Electric Light. Dwight H. Murray.
22 Pertussis with Unusual Cerebral Symptoms. Edwin E. Graham.
23 *The Application of Hospital Methods for the Prevention and Treatment of Puerperal Sepsis to Private Practice. William S. Stone.
24 *Prophylactic Injections of Tetanus Antitoxin in Cases of Wounds from Toy Pistols. Fielding L. Taylor.
25 *Surgery of the Prostate from the Standpoint of Personal Experience. Being the Oration in Surgery. (Concluded.) Granville MacGowan.

18.—See abstract in The Journal, xl, p. 1602.

19. The Feeble-Minded.—Barr considers that the defective or feeble-minded have been comparatively neglected while the state has been caring for the criminal and the insane. The rapid increase of this class makes them a problem which must be attended to. Of the three classes, the untrainable idiot, the untrainable imbecile and the cunning and treacherous moral imbecile, the idiot is the most harmless and most easily disposed of. An asylum where he can be cared for under medical supervision is all that is required. Such an institution can be run very comfortably on a comparatively moderate income. The idiots can be taught, at least the better class of them, to be useful, to do household services and help in the care of others. The adult idiot or imbecile here can also have a peaceful home. A training school for backward children or the feeble minded is a very different affair. High grade imbeciles can be trained for certain employments, such as musicians, cabinet makers, painters, seamstresses, carpenters, etc. Barr, however, points out the consequences of discharging such cases from the public care when they appear to have recovered. The immediate result is marriage and increase, for imbeciles they are still, though this may be imperceptible to the friends and the public, and it is transmissible. The moral imbecile is another difficult problem, and in the highest grades they are dangerous persons, capable of doing immense harm. For training imbeciles he believes in the colony system. They should never be turned out on the world, and on their own responsibilities.

21 **Ether-Vapor Ignition.**—Murray reports a case where ether vapor seemed to become ignited in the presence of a closed electric light, which he thinks was due to the electric spark. There was no other possible apparent cause. He has tried to experimentally reproduce the condition, but without success, in obtaining ignition. The fact that it has once occurred is of importance, and the surgeon or anesthetist should be on his guard.

23 **Puerperal Sepsis.**—Stone details the hospital methods that he thinks advisable in private practice. Some of these are difficult to put into practice, such, for instance, as shaving the vulvar hairs, etc. The principal thing, however, is the care of the hands, and he has used gloves in his private practice for two years with the greatest satisfaction. He thinks by their general use the morbidity of puerperal infection can be reduced at least one half. He concludes with some remarks on the treatment of puerperal infection and insists on the importance of accuracy of diagnosis, recognition of the initial chill and careful examination of the pelvic organs at the initial period of the disease. As soon as the fever appears, excluding the breasts and constipation as causes, the patient should be transferred to a table and placed in the lithotomy position, with or without anesthesia, according to the circumstances, and after sterilization of the attendant's hands and external genitals, a systematic examination beginning with the perineum should be made. Until he adopted this method he was altogether unaware of the frequency in which infected wounds below the placental site were the cause of the trouble. It is a very common error to give an intrauterine douche before thorough examination, and in many cases transference of the infection to the placental site is caused by our initial efforts at treatment. The parts are examined upwards from the perineum to the fundus of the uterus with the greatest care, and wherever wounds are found they are aseptically treated with irrigations of sterile salt solution, which is sufficient in most cases to produce healing and disappearance of general symptoms. Retained discharges may be found to be the cause. If there are putrid remains of gestation products, these may be removed by the fingers supplemented by the use of some dull instrument. A common error is to mistake the roughened placental site for retained gestation products. Washing out the cavity with hot saline solution is usually sufficient, he protests against the use of antiseptic douches. The more radical procedures, such as hysterectomy, are indicated in very few instances. If cellulitis or peritonitis is present, an ice bag to the abdomen, followed later by prolonged and hot vaginal douches, aids in the absorption of exudate. If an abscess is present it is opened in the most accessible region.

24 **Tetanus Prophylaxis.**—Taylor advises the use of prophylactic injections of tetanus antitoxin in cases of toy pistol wounds. It has been the custom for the last two years at the Hudson Street Hospital in New York to inject 10 c.c. in each patient, and they are now practically rid of tetanus from this class of wounds.

25 **Surgery of the Prostate.**—MacGowan, in this concluding section of his article, notices the inconveniences of suprapubic operation and the possible dangers of urinary infiltration with hemorrhage, irregular cicatrices, deformity of the bladder neck, etc. Leakage of the suprapubic wound is annoying and may last for weeks. The difficulties of the perineal operation are not usually great. Its perils consist: 1. In the making of an irregular tear in the bulbous urethra by the assistant who holds the staff thrusting it awkwardly and violently through the bulb. This causes delayed healing of the urethral wound, and sometimes the formation of a fistula difficult to repair. 2. When the prostatic capsule is entered and an attempt made to enucleate its contents, no line of cleavage can sometimes be found, and persistence may lead to the tearing away of the organ from the pelvic tissues, causing urinary infiltration and infection. 3. If such fibroid growths are removed piecemeal with scissors and rongeur, it leaves a very irregular channel, which subsequently tends to contract, sometimes obstructing urination so that the patient is no better off. 4. There is also danger of tearing into the rectum, which once happened to MacGowan in a cancerous prostate, and which is liable to happen to anyone operating in a very dense or fibroid prostate. 5. When the bladder tissues have been greatly bruised by sharp stones before the operation and where the urine is hopelessly alkaline with all that that implies, all wounded surfaces within the bladder, and sometimes within the prostate, become covered with phosphatic incrustations. These are subsequently cast off or may have to be loosened by curetting somewhere between the third week and the third month. In one case he had to reopen the suprapubic wound on this account. In still another case, such sloughs came away through the perineal wound, which reopened apparently from this cause and subsequently closed itself. 6. Dangerous hemorrhage is not common by the perineal route unless the case is complicated by a tight stricture in the perineal urethra, requiring the severing of the bulb in the course of the operation, or unless the bulb is carelessly cut in making the opening in the urethra, but secondary hemorrhage is liable to occur. He has seen it now in two cases during the past year, following an attack of tenesmus which seemed to arise from an organized clot formed on one side of the bladder neck. When the packing was removed and the perineal wound practically closed, this clot was swept into the urethra and became fixed, causing tenesmus. The forcible contraction of the bladder neck on the clot loosened it from its vessel and a hemorrhage then took place into the bladder, filling it to distention in less than two hours. In one case he was able to stop the hemorrhage by breaking the clots up by a lithotrite. In the second case he had to do a suprapubic cystotomy under most unfavorable conditions. 7. There is another danger where one or more small nodules are imbedded directly in the tissues around the internal urethral mouth or from nodules buried beneath the mucous membrane just inside the urethral neck. Their removal is necessary, but it may be followed by the tearing out of the whole posterior urethra. This is a disagreeable accident, but it does not necessarily interfere with later function. 8. In making the perineal incision in very large stout men with deep perineums, great care should be exercised to keep well away from the rectum with the skin cut. He has had trouble in having the anterior fold of the anus drawn into the wound, with leakage, though there was no cut in the rectum itself. The benefits of the operation are enumerated. The sexual power usually remains after operation, in spite of the teachings of the Necker school. In the great majority of his 49 prostatectomies and 29 Bottini operations, the results have been ultimately good. None have been positive failures. A few have dribbled for a time but none permanently. He has never yet seen one of these cases where it was not necessary to urinate four or five times in the twenty four hours, and does not look for it. He says, regarding prostatotomy by the

Bottini method, that it possesses a real surgical value and for certain prostatic obstructions it is to be advised.

Cincinnati Lancet-Clinic.

June 27.

26 *Scientific Work in Ohio State Hospitals. A. P. Ohlmacher.
27 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.

26. **Scientific Work in State Hospitals.**—Ohlmacher notices the work that is being done in the various states at the central laboratories, to which the state hospitals contribute material, and gives the project of a plan he has made for a State Pathologic Institute for Ohio, which should, he thinks, be organized similarly to those of New York and Michigan. It should be open to properly qualified workers from the medical profession of the whole state. The plan includes the formation of a pathologic museum, and strictly scientific memoirs should be issued from time to time after the model of the *Archives of Neurology* of Great Britain. The laboratory should also send out popular bulletins for public distribution giving in plain language the results of scientific work whenever any distinctly valuable contributions in the direction of elucidating the nature of disease or indicating methods of prevention have been made. The government should be under the charge of a board of trustees representing the state medical association, the state hospitals and the state university, with the balance of power in the medical profession. Its immediate management would call for a director or chief with a corps of properly trained assistants of his own selection. He thinks the time is auspicious for such an institution and that the influence of the medical profession can be well exerted to this end.

St. Louis Medical Review.

June 20.

28 Treatment of Puerperal Eclampsia. B. M. Hypes.

Virginia Medical Semi-Monthly, Richmond, Va.

June 12.

29 *Mastoid Pain Not Due to Empyema or Osteitis of the Mastoid Cells, nor to Sclerosis of the Mastoid Process. John Dunn.
30 *Laceration of the Bowel without External Evidence of Injury. Report of a Case, with Remarks on Diagnosis. E. B. Claybrook.
31 Treatment of Anal and Rectal Diseases without General Anesthesia. William L. Dickinson.
32 Cases of (1) Puerperal Insanity; (2) Polyuria Following Brain Injury, and (3) Paralysis and Convulsions Years After Traumatism. W. J. Breeding.
33 Retention of Placenta and Collapse from Excessive Hemorrhage After Delivery. G. Clinton Mouton.
34 Rubber in Windowing Plaster Casts in Compound Fractures. Hugh Crouse.
35 Artificial Feeding of Infants, or Care of Bottle-fed Babies. Hugh T. Nelson.
36 The Treatment of Enlarged Prostates. W. P. Carr.

29. **Mastoid Pain.**—Dunn reports cases where pain referred to the mastoid was due to gumma, relieved by specific medication, and to influenza. He also refers to rheumatism of the atlanto-axidian capsular ligaments as producing symptoms attributable to the mastoid. There is also a mastoid pain which is not due to mastoiditis, though associated with otitis, with which all aurists are familiar.

30. **Intestinal Laceration.**—Claybrook reports cases and reviews others in the literature where laceration of the bowel occurred from contusions without any external injury. He says that if we have a patient with a history of abdominal contusion, suffering pain, with marked tenderness and rigidity, thoracic respiration, absence of peristalsis, as shown by the phonendoscope and transmission of heart and respiratory sounds to the abdomen, with or without rapid pulse, shock or abdominal facies, vomiting or distention, etc., we ought to lose no time in confirming the diagnosis by exploratory laparotomy and deal with the conditions as found. Opening the bowel in these cases does not increase the danger, and we never know what is inside until we get at it.

Pediatrics, New York.

June.

37 *Dislocation of One-half of the Frontal Bone During Parturition. Stewart L. McCurdy.
38 *Adenoids and Their Treatment. J. F. Dickson.
39 The Changes in the Management of Laryngeal Diphtheria Treated by Intubation. Edwin Rosenthal.

37. **Dislocated Frontal Bone.**—McCurdy reports a case of dislocation of the frontal bone, which occurred during parturition, the bone being displaced outward. At the time when first seen, it was too late to replace it, and the brain has evidently adapted itself to the changed conditions. A spring band was applied with pressure pad, but little was accomplished.

38. **Adenoids.**—Dickson describes the condition and advocates operation, or at least medical treatment when symptoms indicative of these growths appear. If they are not large and are soft and friable, treatment directed to the nose and nasopharynx followed by local applications of tannic acid and glycerin or iodin and glycerin and internal medication such as syrup of iodid of iron or hydriodic acid and tonics may be all that is required. If they are large, hyperplastic operative measures are necessary. He prefers cutting operations to the cautery, and thinks it is better to use an anesthetic unless the patient is old enough to control himself. He discourages the use of a steel nail on the finger, considering it dangerous. For anesthesia, he prefers ether, next chloroform. Nitrous oxid, he says, is of too short duration for good work. The patient should be laid on his side, with his head hanging over the edge of the table. Good results of operation are noticeable within a week or ten days. After-treatment in the shape of sprays, etc., should be kept up for a few weeks after operation, as it helps to prevent recurrences.

Medicine, Detroit, Mich.

June.

40 *Treatment of Prolapse of the Rectum. A. E. Halstead.
41 A Case of Cyanosis (Asphyxia) of the Extremities. Augustus A. Eshner.
42 *The Negro as a Distinct Ethnic Factor in Civilization. William L. Howard.
43 *The Dangers of an Exclusive Milk Diet in Nephritis. Alfred C. Croftan.
44 *Cockroaches as Conveyers of Typhoid Infection. Rosa Engelmann.
45 *Blood Cultures in Lobar Pneumonia and Agglutination of the Pneumococcus. Edward C. Rosenow.

40. **Prolapse of the Rectum.**—The different methods of treatment for this condition are described by Halstead, who reports six cases. He concludes that all cases of mucous prolapse of the rectum will be best treated by resection of the protruding mucous membrane and suture of the cut end to the skin of the anus, as in Whitehead's operation for hemorrhoids. In mild cases clamping and cauterizing the linear folds of the prolapse may suffice to effect a cure. In recent reducible prolapse of all coats of the rectum, removal of the cause, if possible, with massage, gymnastics, and proper medication to improve the general health should be first tried. If they fail, amputation or intra-abdominal suspension is advised. In young children operative treatment of prolapse is seldom required. The removal of the cause, which usually can be accomplished, and rest in a horizontal position with tonics and massage will effect a cure in most cases. Among the commoner pathologic conditions having direct causal relation to prolapse in children are intestinal catarrh, rickets, phimosis and calculus. In old irreducible or in recent strangulated cases, the only treatment is amputation by Mikulicz's method. In old irreducible prolapse or in recent cases, where after a fair trial of palliative remedies they have failed, we have the choice of two methods, amputation or intra-abdominal fixation. At present no authoritative statement as to the value of colopexy can be given. It has the advantages of not being dangerous and of being easily performed. When it fails it does not leave the patient worse than before. Inguinal colostomy should never be performed except under special indications, as, for example, when prolapse is associated with obstinate colitis which does not yield to treatment or when stricture or malignant disease exists. Simple catarrhal inflammation or prolapsed rectum does not justify opening the colon. Rectopexy, if employed, should be used only in the lesser degrees of prolapse. In invagination of the rectum and colon it is of no value. In any case its disadvantages and dangers outweigh its advantages.

42. **The Negro.**—Howard remarks that the negro is structurally and psychically an animal, entirely apart from the white race, not capable of improvement. He is returning under present conditions to the atavistic state and is a social danger. The only good point he admits is that he is not vindictive.

43 **Nephritis**—Croftan argues against an exclusive milk diet in nephritis claiming that it does not meet the needs of the general nutrition It contains too little iron, an excess of proteids and floods the system with fluids Its effects on the renal epithelium are bad It is apt to retard the healing process in subacute forms and is superfluous in chronic cases Large quantities of water of urea and of the phosphates, all of which are carried to the kidneys by this diet in excess, are irritants and harmful Its effects on the other organs are also injurious mechanically, through the large amount of fluids and the effects on the circulation The diet for nephritis should contain a minimum of proteids and of water in the acute cases and the withdrawal of all food or its reduction to a small quantity is preferable to feeding with milk In chronic cases a similar dietary is also required though we are not at present able to formulate fixed rules We do not know enough of the etiology of the condition to decide He thinks the consensus of clinical experience speaks for more liberal feeding of kidney cases than is usually adopted, and decidedly against one sided alimentation

44 **Cockroaches and Typhoid**—Engelmann gives the conditions in a typhoid epidemic in a certain limited district in Chicago, and describes the conditions, attributing the transmission of the disease to cockroaches

45 **Pneumonia**—The conclusions of Rosenow's article are as follows

1 With improved technic, using for inoculation large quantities of blood the pneumococcus can be recovered in all cases of pneumonia and in obscure cases of pneumococcus infection blood cultures may be a diagnostic method of positive value 2 Pneumococcemia in pneumonia does not mean a specially unfavorable prognosis 3 On account of the difficulties involved agglutination of the pneumococcus is at present of scientific rather than of practical value 4 Normal and pneumonic blood and serum appear to have no bactericidal influence on the pneumococcus 5 The interesting question whether lobar pneumonia is the primary result of a direct local infection of the lung or of a secondary localization in the lung of pneumococci in the blood is as yet hardly ripe for final discussion

Bulletin of the Johns Hopkins Hospital, Baltimore

June

46 The History of St Bartholomew's Hospital, London Thomas McCrae
47 *Cryoscopy as an Index of Renal Insufficiency in Surgical Diseases of the Kidney Martin B Tinker
48 A Simple Electric Female Cystoscope Thomas S Cullen

47 **Cryoscopy in Renal Insufficiency**—Tinker has studied the effects of renal insufficiency on the freezing point of the blood and urine, that of the blood is normally about —0 56 C below that of distilled water, with physiologic variation of about 02 degrees The increase of the freezing point to over —0 58 C indicates renal insufficiency The urine, on the other hand has a much wider range Under normal conditions the freezing point of the urine varies between —0 9 and —2 C A freezing point of above —0 9 is understood as an indication of renal insufficiency A large number of cryoscopic examinations have been made, sufficient, it is thought, to prove the value of the test Its advantage, Tinker says, over the usual quantitative chemical tests is that it gives an index of the total waste products excreted by the urine instead of that of a single constituent He thinks that it might even alone be sufficient to determine the condition of the kidney, provided we can get the separate secretions of the two kidneys The value of cryoscopic examination of mixed specimens alone is much inferior, however, to that of cryoscopic examination of the blood In all doubtful cases both tests may be used in combination with the usual chemical tests with added certainty as to the state of the kidneys The chief value of the test is in determining the prognosis in doubtful cases If examination indicates a high degree of renal insufficiency, operation may be contraindicated In other cases it may be of use in determining whether nephrectomy or a less extensive operation such as nephrotomy or nephrolithotomy, should be given preference The usefulness is a limited one in surgical cases, but when it is indicated it is very much needed, and the information it gives is correspondingly valuable The method is simple and can be readily made by those little experienced in its use It requires no special training and it does not take more time than many other methods

American Gynecology, New York.

May

49 Presidential Address—The Surgical Treatment of Early Diagnosed Cancer of the Uterus, More Especially by Hysterectomy J E Janvrin
50 *Ectopic Gestation Etiology, Symptoms, Diagnosis; Treatment J H Stealy
51 Vesicofixation of the Uterus N J Hawley
52 *The Conservative Surgery of Lesions of the Appendages Hector Treub

50 **Ectopic Gestation.**—This condition, according to Stealy, is by no means infrequent, it is among the most serious conditions that we meet It generally occurs in those near the middle of life with a previous history of sterility The symptoms specially to be borne in mind are. 1 That the woman will have missed a period, 2, colicky pains, 3, bloody discharge from the vagina and irregular continuation of menstruation, often leading the woman to believe herself not pregnant With few exceptions, and these dependent only on the woman's condition, the indications for operation are absolute He says no case of "colic' in a woman capable of childbearing, especially one married, should be allowed to pass by without a suspicion of ectopic gestation. Any such symptoms in a pregnant woman should not be lightly regarded

52 **Conservative Surgery of the Appendages.**—Treub finds in striking the balance for conservative operation that such procedures for salpingo ovaritis offer a danger of death that ought to be estimated at 2 per cent. at the most; some chances of not giving complete relief, of being insufficient and necessitating a second operation either conservative or radical, and the certainty of not procuring for the patient a new malady, under the form of the anticipated menopause Comparing this balance with that of radical operations, he concludes that medical treatment suffices in at least one half of the cases of salpingo ovaritis, but if it is insufficient or contraindicated, one should never at the outset perform a radical operation of any sort The first operative stage should always be posterior colpotomy When by means of posterior colpotomy it is discovered to be a matter of tuberculous affection, hysterectomy should be performed as soon as possible In case of hydrosalpinx not yielding to repeated colpotomy and requiring other intervention, and where one wishes to try and remedy sterility in women, the conservative abdominal operations (resection, salpingotomy salpingo ovaro syndesis) are indicated Salpingorrhaphy should be reserved as an accessory operation to a laparotomy performed for no matter what other indication

Journal of Cutaneous Diseases, New York.

June

53 Methods of Teaching Dermatology John T Bowen
54 *Cases of Bullous Dermatitis Following Vaccination James S Howe
55 Syphilis and the Medical Secret Prince A Morrow

54 **Bullous Dermatitis**—Howe reports ten cases of bullous dermatitis apparently following vaccination He is inclined to think that infectious material introduced at the time of vaccination was perhaps the cause, though there is no scientific proof of such an assertion. The article is presented as a preliminary report A fuller discussion of the cases is promised in the future

The Alienist and Neurologist, St. Louis

May

56 *History of the Evolution of the Brain Charles H Hughes
57 *Mixoscopic Adolescent Survivals in Art, Literature and Pseudo ethics (To be continued) James G Kiernan
58 Outlines of Psychiatry in Clinical Lectures C Wernicke
59 Clinical and Pathologic Changes in Dementia Paralytica During Recent Decades G Nacke
60 *The Penitentes A Psychological Study Marc Ray Hughes

56 **The Evolution of the Brain**—This article is a chapter of a work by Hughes which is now nearly ready for publication

57 **Mixoscopic Survivals**—Kiernan's article is incomplete in this issue It is largely devoted to the sexual element as appearing in the various forms of folklore and in adolescent conditions

60 **The Penitentes**—Hughes studies the so called penitentes of Old and New Mexico, whose religious exercises, in part, consist of self flagellation He considers it due to a mental defect and thinks that these individuals are degenerates due to faulty development under a low grade of civilization and imperfect system of education

Medical Sentinel, Portland, Ore.

June.

61 *The Plague Situation in San Francisco and the Problem of Chinatown. Woods Hutchinson.
62 *The Meaning of Uric Acid and the Urates. (Concluded.) Woods Hutchinson.
63 Hernia. E. N. Crockett.
64 The Sympathetic Nervous System in Health and Disease. D. M. Brower.

61. **The San Francisco Plague Situation.**—Hutchinson gives the history of plague in San Francisco with caustic criticisms of the late state authorities.

62. **Uric Acid.**—This second paper, also by Hutchinson, concludes the series. He ends it with the following propositions which seem to outline the most rational tenable view of gout and lithemia: There is no connection whatever between the production of urea and uric acid, hence interdiction and marked limitation of animal or of nitrogenous foods, as such, in gout is irrational. Uric acid in health comes from two sources, the larger part from the nuclein and purin bases of foods, the smaller part from destructive metabolism of the nucleins of the body tissues. It is the latter alone which is increased in gout and lithemia. These are only symptom names for a miscellaneous group of chronic toxemic processes of widely varied origin characterized by the production of uric acid and the urates. By gouty diathesis we mean the possession of a sufficient degree of resisting power on the part of the protective cells of the body to oppose the entrance of any poison, whatever its character or source, with consequent destructive metabolism and the production of uric acid, but not adequate to neutralize or successfully prevent its absorption. The uric acid of gout, like the phosphoric acid which accompanies it, is merely the result and measure of the destructive metabolism of the nucleins of the body cells, chiefly, it is probable, of the leucocytes in response to the invasion of poisons or toxins, organic or inorganic. Hence the use of lithia or other solvents is irrational and any apparent benefits are to be explained on other grounds. As most of the toxins setting up this destructive metabolism and consequent uric acid production are of intestinal origin or entry, the diet should be regulated wholly with regard to the diminution of intestinal fermentation and putrefaction. As animal foods are more appetizing and attractive, and are more apt to be indulged in to excess, their limitation may be found more frequently indicated than that of the vegetable foods, but sugars and starches are very often at fault. As uric acid and the alloxur group are not toxic, or only feebly so, and are not the cause of gout, the prohibition of foods even rich in nucleins and the purin bases, has no clinical basis, and is of doubtful utility, except as diminishing the attractiveness of the dietary. The rôle of the liver in gout is negative, from its incapacity to act as a poison filter, and to absorb or transform into harmless excretory substances the excess of toxins brought to it by the portal vein. The drugs found of value in gout owe their efficacy chiefly to their power of checking intestinal putrefaction or of preventing the absorption of its products or promoting their elimination.

Interstate Medical Journal, St. Louis.

June.

65 *Simplicity in Dealing with Abscess of the Appendix. Paul Y. Tupper.
66 *Etiology and Pathology of Puerperal Eclampsia. Max W. Myer.
67 Symptoms and Differential Diagnosis of Puerperal Eclampsia. C. A. Ritter.
68 Treatment of Puerperal Eclampsia. B. M. Hypes.

65. **Appendicitis.**—Tupper pleads for simpler methods of operation in appendicitis. He thinks it is best to leave the appendix alone in appendiceal abscess. We may weaken the abscess walls and cause rupture, and we can do no harm by its retention. He objects also to mopping or washing out the cavity. His own practice is simply to enter the abscess in the most direct way, making a free opening and then insert a gauze drain.

66. **Puerperal Eclampsia.**—Myer is inclined to favor Fehling's theory of the fetal etiology of puerperal eclampsia as well as an autointoxication from the maternal organism.

The Physician and Surgeon, Detroit and Ann Arbor, Mich.

March.

69 *The Ureteral Dilatations, Spindles, Reservoirs and Ampullæ Byron Robinson.
70 *A Few Facts Regarding Paretic Dementia. Irwin H. Neff.
71 *Medical Malpractice. William P. Lane.
72 *The Surgical Treatment of Smallpox. Laurel B. Sandall.

69. **Ureteral Dilatations.**—Robinson's article is a full detailed account of various swellings and contractions of the ureters and their relation to age and other conditions.

70. **Paretic Dementia.**—Neff holds that heredity has a large influence in the causation of paretic dementia, while the percentage of syphilitics is also too considerable to be disregarded. Other influences, however, may act in producing the same symptoms.

71. **Medical Malpractice.**—The relation of the physician to the law is discussed by Lane, who finds from the decisions of the courts that the physician or surgeon will not be held liable if he uses reasonable and ordinary skill and learning and exercises reasonable diligence and care. Mere errors of judgment are not grounds for conviction for malpractice. Gross carelessness or failure to exercise proper diligence and caution, regardless of his learning and skill, make him liable, and he will be more liable if he employs methods prohibited by law, and when he omits altogether the established mode of treatment and follows one that has proven injurious. He does not impliedly contract to cure, but if a contract be entered into the law of contracts will apply. When the defense to an action for malpractice is that plaintiff's own negligence contributed to the result, the burden of proving it is on the defendant.

72. **Smallpox.**—Sandall, from his experience in the Philippines, believes in the practice of opening the pustules freely. He would use antiseptic baths from the very beginning and keep the skin as nearly aseptic as possible. As soon as the spots become vesicular, open the top and remove all contents, applying antiseptic solution to the whole open surface. The pustules, after they have formed, should be treated in the same way and the skin kept free from pus. The vesicles once thoroughly opened and destroyed do not proceed to pus formation and absorption of the poison is avoided.

Buffalo Medical Journal.

June.

73 *Provisional Hemostasis in Operations on the Head and Neck. George R. Fowler.
74 Stimulation. Eli H. Long.
75 Blood Examination in General Practice. Irving P. Lyon.
76 Gout and Its Treatment. M. A. Auerbach.
77 Report of Two Interesting Medicolegal Cases. William C. Krauss.
78 Subcutaneous Injection of Paraffin in the Correction of Nasal Deformity. Edgar A. Forsyth.

73. **Provisional Hemostasis.**—Fowler gives the history of provisional hemostasis in surgery, and reports cases in which he has used Crile's method of compression of the common carotids with advantage. He considers the possibility of accidents in these cases avoidable by proper care as a rule, and that there need be little said as regards the possibility of permanent injury to the vessel. In his experience there were no bad effects excepting in one case in which aphasia was produced, but this was undoubtedly due to some lesion in the handling of the brain. The case was one of intracranial neurectomy after Abbe's method. The brain was elevated during the operation and a sensory aphasia developed afterward. The only explanation to be given was that it was due to some lesion of Broca's convolution owing to the general atheromatous condition of the arteries of the brain.

American Journal of Obstetrics, New York.

June.

79 *Pregnancy Complicated by Fibroid Tumor. Henry C. Coe.
80 Pregnancy and Labor Complicated by Myomata. George Tucker Harrison.
81 *Combined Bisection of Tumor and Uterus, with Partial Enucleation of Bisected Tumor in Abdominal Hysterectomy for Large Fibroid Tumors in Body of Uterus. George H. Noble.
82 *The Relation and Corelation of Gynecologic and Nervous Affections. Chauncey D. Palmer.
83 *Repetition of Cesarean Section on the Same Patient: The Experience of the Boston Lying-in Hospital. Charles M. Green.
84 *Carcinoma of the Cervix Uteri. Thaddeus A. Reamy.

85 *Primary Carcinoma of the Vulva. Reuben Peterson.
86 Should the Uterus be Removed when Operating for Double Pyosalpinx, Either from Above or Below? Philander A. Harris.
87 Should the Uterus be Removed when the Ovaries and Tubes are Removed in Cases of Double Pyosalpinx, when Operating Either Through the Abdomen or the Vagina? I. S. Stone.
88 *Note on the Occurrence of Gallstones in Insane Women. W. P. Manton.

79.—See abstract in THE JOURNAL, XL, p. 1447.

81.—Ibid., p. 1529.

82.—Ibid.

83.—Ibid., p. 1595.

84.—Ibid., p. 1596.

85.—Ibid.

88.—Ibid., p. 1597.

American Practitioner and News, Louisville, Ky.

April 1 and 15.

89 Amebic Dysentery. G. B. Young.
90 The Treatment of Pneumonia. J. E. Smith.

Proceedings of the Philadelphia County Medical Society, Philadelphia.

May 30.

91 Modification of Milk for Infant Feeding. Edwin E. Graham.
92 Management of Malignant Disease of the Uterus. George E. Shoemaker.
93 Orbital Cellulitis as a Sequel of Scarlatina: The Report of Two Cases. Burton Chance.

Washington Medical Annals, Washington, D. C.

May.

94 *The Abuses and Uses of Venesection in the Practice of Medicine. Robert Reyburn.
95 Case of Dentigerous Cyst. R. M. Slaughter.
96 Case of Tumor of Cerebellum. Samuel S. Adams.
97 Atrophic Rhinitis. Charles W. Richardson.
98 Multiple Fistulæ of the Perineum, with Report of a Case. Wallace Neff.
99 A Consideration of the Liver as a Factor in the Cause, Prevention and Treatment of Disease. Robert S. Lamb.
100 Downes' [illegible] Cases of Removal of Uterus, Append[illegible] J. W. Bovée.
101 Case of [illegible] and Stricture of Rectum; Gonorrheal Tubo-ovarian Cysts. D. S. Lamb.
102 Case of Tubo-ovarian Abscess and Salpingitis. Operation. J. Wesley Bovée.
103 The Treatment of Certain Inflammations of the Prostate, Bladder and Kidney. Edward L. Keyes.
104 Complete Nephro-ureterectomy. J. Wesley Bovée.
105 Case of Appendicitis. S. S. Adams.
106 Case of Uterine Fibroids Removed by Operation. J. Taber Johnson.
107 Case of Decidual Haematomata. A. Behrend.

94.—This article was published in THE JOURNAL, XL, p. 1564.

Oklahoma Medical News-Journal, Oklahoma City.

June.

108 The Present Status of the Therapeutic Uses of the X-Rays. J. Edward Stubbert.
109 Temporary Expedients in the Primary Treatment of Fractures. Thomas H. Manley.
110 Tetany and Eclampsia in Childlife. (Concluded.) Rudolph Hecker.
111 Suprapubic Lithotomy. A. K. West.

Alabama Medical Journal, Birmingham.

June.

112 Jerome Cochran Lecture. G. H. Price.
113 Some Observations on a Crusade Made Against the Mosquito in Talladega, Ala., During Summer of 1902. B. B. Sims.
114 Ophthalmia Neonatorum, Its Prophylaxis and Treatment. Paul S. Mertins.
115 Education. R. M. Cunningham.
116 Artificial Infant Feeding. J. F. Jenkins.
117 Biogenesis and Heredity. Raymond Wallace.
118 Gonorrhea. Its Dangers and Its Rational Treatment. W. C. Williams.

Medical Review of Reviews, New York.

May 25.

119 The Antiseptico-Anesthetic Method of Treating Pulmonary Tuberculosis. Ambrose T. Holly.

Richmond Journal of Practice.

May.

120 Mastoid Pain Not Due to Empyema or Osteitis of the Mastoid Cells, Nor to Sclerosis of the Mastoid Process. John Dunn.

Medical Times, New York.

June.

121 What Kills the Surgical Patient—Anesthesia, Shock, Hemorrhage, Nephritis, Peritonitis, Embolus, Pneumonia? Byron Robinson.
122 Interesting Complications in Typhoid Fever. T. F. Hale.
123 Treatment of Multiple Neuritis and Neuralgias. William Wormley.
124 The Physiology of Pain. Hermann Gasser.
125 The Relation the Uterus Bears to the Mind. J. C. Carlton.

New England Medical Monthly, Danbury, Conn.

June.

126 Removal of Tonsils. C. E. Boynton.
127 Colorado Springs, the "City of Sunshine," as a Health Resort for Pulmonary Diseases. Harlan Trask.
128 The Relation of the Physician to Politics. Donly C. Hawley.
129 A Common Cause of Tuberculosis. T. J. Townsend.
130 The Treatment of Septic Processes by Intravenous Collargolum Injections. Dr. Jaenicke.
131 Sublamine in the Treatment of Syphilis. N. Friedländer.
132 Remarks on the Prevention of Appendicitis. Sinclair Tousey.

Medical Standard, Chicago.

June.

133 Diagnosis and Treatment of Chronic Catarrh of the Stomach. Charles D. Aaron.
134 A Surgical Clinic. (Ectropion, etc.) N. Senn.
135 The Medical Society of the State of New York and the American Medical Association. A. L. Benedict.
136 The Operation for Pyosalpinx, with Report of Twenty-two Cases and Five Secondary Hysterectomies, with One Death. (Concluded.) Raymond C. Turck.
137 Pain and Its Indications. E. C. Hill.

International Journal of Surgery, New York.

June.

138 Gangrene or Mortification Dependent on Lack of Skill or Neglect in the Treatment of Fracture. Thomas H. Manley.
139 Shock in Emergency Surgery. F. H. McNaught.
140 Posterior Pudendal Hernia, with a Report of Two Cases Complicating Pregnancy. C. W. Milliken.
141 The Technics of Amputations. R. H. Cowan.
142 A Method of Dealing with Fractures. J. B. Taulbee.
143 The Surgical Assistant. (Operations on Stomach and Intestines.) (Continued.) Walter M. Brickner.
144 Necrosis of Six Inches of Ileum, Simulating Appendicitis. William H. Woglom.

Kansas City Medical Index-Lancet.

June.

145 Clinical Report. Two Cases of Ectopic Gestation. Jacob Block.
146 Tonsilitis. Tinsley Brown.
147 Tubo-ovariotomy. C. E. Fulton.
148 Report of Cases. (Epithelioma, etc.) Harry W. Wright.
149 A Layman on Antitoxins. E. W. Caldwell.
150 An Unusual Case of Poisoning. Frank C. Neff.

Medical Summary, Philadelphia.

June.

151 Appendicitis. G. O. Smith.
152 Dilation of the Rectum. J. A. Burnett.
153 Headache. S. A. Buchanan.
154 Specific Macrotys and Its Use. Andrew J. Mann.
155 Medical Competition. C. E. Boynton.
156 Rational Aphrodisiac Treatment by the Use of the Alkaloids. W. C. Buckley.
157 Some Points on Spiritualism, Consumption and Epilepsy. Horatio S. Brewer.
158 Unwritten Medicine—Coal Oil. Benjamin H. Brodnax.
159 Newness Is Always of Interest and Many Times Beneficial in all the Vocations and Professions of Life. William H. Vail.
160 A Case (Rupture of the Womb). D. M. B. Thom.
161 Constipation. George J. Monroe.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

British Medical Journal, London.

June 20.

1 *Muscular Movements and Their Representation in the Central Nervous System. Charles E. Beevor.
2 The Rapid Estimation of the Quantity of Chloroform Vapor Present in Mixtures of Chloroform Vapor and Air. Augustus D. Walker and Victor Geets.
3 The Influence of Ether Administration on Nitrogenous Metabolism. Horace J. Pechell.
4 The Process of Chemical Synthesis in Living Things. Arthur C. Hill.
5 Case of Tuberculous Meningitis in an Adult, with Unusual Symptoms. T. H. Morse and A. J. Cleveland.
6 Some Observations on the Morphology of the Trypanosoma Found in Sleeping Sickness. Aldo Castellani.
7 *The Physiologic Action of Ethyl Bromid and of Somnoform. Sydney W. Cole.

1. Muscular Mechanism.—This second Croonian lecture by Beevor is a continuation of the one in the last issue devoted to the *mechanism* and the action of the muscles of the upper extremities and the trunk. Like the former it is incapable of being abstracted.

7. Somnoform.—This mixture, which has been used as an anesthetic, largely in France in minor operations, is made up of ethyl chlorid 65 per cent., methyl chlorid 30 per cent., and ethyl bromid 5 per cent. It has been investigated by Cole, who

offers his conclusions as a preliminary communication, as follows:

> The chief indications that my experiments afford as to the use of somnoform as an anesthetic are: 1. The chief danger being a paralysis of respiration, a careful watch must be kept over the respiratory movements. 2. Owing to the depression or paralysis of the peripheral endings of the cardio-inhibitory fibers and the comparative slight action on the heart itself there is no danger of heart failure, provided respiration has not ceased. 3. After cessation of the respiratory movements it is easy to restore the animal by artificial respiration. I am of the opinion that the paralysis of the cardio-inhibitory fibers by ethyl bromid renders that drug a very valuable anesthetic. Embley has recently shown that the sudden death that not infrequently occurs in chloroform anesthesia is due to inhibition of the heart through stimulation of the cardio-inhibitory center. This is usually only seen in the early stages of chloroform administration, the danger passing off when the medullary centers are exhausted. I venture to suggest that a valuable anesthetic for prolonged operations could possibly be obtained by combining ethyl bromid with chloroform. During anesthesia produced by ethyl bromid the vagi are paralyzed; chloroform would then be deprived of one of its great dangers. It might be possible to get well past the stage of excitation into that of depression of the medulla before ceasing to give ethyl bromid, and maintaining anesthesia by chloroform alone, ethyl bromid being discontinued owing to its paralytic effect on respiration. I hope shortly to give an account of experiments I am performing to test this possibility.

The Lancet, London.

June 20.

8 Muscular Movements and Their Representation in the Central Nervous System. Charles E. Beevor.
9 *Intubation in Cases of Diphtheritic Laryngitis. H. A. T. Fairbank.
10 Two Fatal Cases of Partial Thyroidectomy. Frank C. Madden.
11 *On the Danger of Railway Trips to High Altitudes, Especially for Elderly People. Theodore Zangger.
12 *On the Discovery of a Species of Trypanosoma in the Cerebrospinal Fluid of Cases of Sleeping Sickness. Aldo Castellani.
13 Case of Chorea Gravidarum Treated by Inducing Abortion. John Benjamin Hellier.
14 *A Simple Expedient in the Estimation of Sugar by the Copper-reduction Method. S. Archibald Vasey.
15 Preliminary Note on the Use of Chloroform in the Preparation of Vaccine. Alan B. Green.

9. **Intubation.**—Fairbank's article is based on an experience of 33 cases. He remarks on the scarcity of literature on the subject in Great Britain since the introduction of antitoxin. Taking his own cases with those of Kellock and Basan, he has 78 cases of intubation associated with antitoxin treatment, with 76.9 per cent. of recoveries. Roux mentions 128 cases, with a percentage of recoveries of 62.8. According to his own experience the greater the skill of the operator the better the results. The operation is an easy one, provided the operator has had practice, and in experienced hands is practically free from danger, though death may occur from syncope, as in a case reported. He thinks the sizes recommended by O'Dwyer for the different ages are rather small, and that the size of the child should be considered rather than its actual age. The male larynx is a little larger than that of the female of the same age. Fairbank believes in retention of the string as long as the tube remains, and in all his cases the thread was left attached to the tube. He fixes it to the cheek with a piece of strapping, and thinks the children soon get used to it. In only one of his cases was there any trouble from the child biting through the string. Abrasions and ulcerations of the epiglottis can be avoided by careful attachment of the string on the cheek, and any little disadvantage on this score is compensated for by its advantages otherwise. After the tube is in place the child should be laid on his side to facilitate the escape of mucus from the side of the mouth. The coughing soon gives way to peace and quiet, and the child is at last able to sleep. Feeding by the mouth is possible in a large number of cases and is worth trying. It is an important point to decide when to take out the tube. In the early stages it should be removed every twenty-four hours for cleaning and to allow expulsion of mucus. He suggests the following rule in the average case. The tube should be removed and replaced at the end of twenty-four hours; removed at the end of another twelve hours and the result awaited. If the tube has to be replaced it should again be removed after twenty-four hours. After it is again replaced it can be left in for forty-eight hours, and will then usually enable the child to dispense with it. Attempts at discontinuing the use of the tube before thirty-six hours are almost invariably unsuccessful. The longest recorded case is one reported by Brothers, in which the tube was held for fifty-eight days with interruptions to the end of the twenty-first day. In one of Fairbank's cases the tube was only required thirty-two hours; the longest case required it until the thirty-fifth day. Its extraction by means of the string is, of course, easy, but an extractor is a dangerous weapon and requires the greatest skill and gentleness in its use. Vomiting after or during intubation is rare and occurred in but one of his cases. Coughing up of the tube is also rare if a suitable size is chosen. If immediate relief is not afforded by intubation, or if the child's distress increases, the tube should be removed, and may bring out with it the membrane or have it coughed out soon after. Tracheotomy should not be performed until the result of removal of the tube has been seen. The membrane may block the tube at any time during the first few days. It is advisable to explain to the nurse the conditions that indicate the need of immediate extraction. Profuse watery expectoration is sometimes observed with great restlessness. By laying the child well over on its side and frequently clearing the throat with a swab, relief will often be afforded. Severe ulceration of the laryngeal membrane is uncommon. In his series 3 secondary tracheotomies were performed, but he is now convinced that they were unnecessary. He analyzes the 5 fatal cases, 1 of which died during the operation of intubation. In another case the child died a day after intubation. There were signs of tuberculosis and general tuberculosis was found. In the third case pneumonia developed and caused death after removal of the tube. In the last case the patient died three days after admission from anuria and bronchopneumonia. He thinks in most of these cases at least the fatal result could not have been avoided if primary tracheotomy had been performed. He notices one or two instances of ugly ulceration from the use of the tube in non-diphtheritic cases. Abrasions or ulcerations may occur very rapidly in debilitated subjects.

11. **High Altitudes.**—Zangger's warning in regard to the dangers for elderly people of rapid railway journeys up to a considerable elevation has already been noticed in these columns, page 1547 of the last volume. A difference of altitude of a little over 8,000 feet, during the mild weather and free from wind, may cause a decrease of blood pressure and of the vital capacity with obvious cyanosis and an increase of the pulse rate. He says people with heart disease hardly need to be warned against making mountain ascensions. In case of elderly people with vascular apparatus impaired to a degree, yet apparently in good health, he would warn them to try an ascension of 3,000 or 4,000 feet before attempting greater elevations. In any case they must acclimatize themselves or become accustomed to the reduction of pressure by stoppage at intermediate stations. He advises them not to try to go above 9,000 feet unless under careful medical supervision. The decrease of atmospheric pressure is of importance and the chemical features of respiration also undergo a change. The amount of oxygen which is absorbed sinks while the respiratory quotient rises. This means that the bodily tissues, inclusive of the heart, receive less than the usual amount of oxygen, and it is also to be mentioned that the muscular substance of the heart is especially liable to suffer from the deficient blood supply. A very important factor which is usually overlooked is the reduction of temperature of the atmosphere, which may be as much from 30 to 60 degrees F., causing the peripheral blood vessels to contract and remain contracted. This must affect the blood vessels and the distribution of blood in the whole system, and on return to low ground considerable oscillations of the blood pressure and a rise of some duration may take place which may explain the occurrence of apoplexy. It must be remembered that the vessels of the brain have not yet been proved to possess vasomotor nerves so that the regulation of the cerebral pressure may be very inconsiderable. He remarks also on the acute dilatation of the heart liable to be produced, and this may occur in spite of its apparent improbability in persons who have been carefully conveyed up to high altitudes without any muscular effort whatever, and may not be perceptible until twenty-four or thirty-six hours after the excursion has been made. It is advisable to immediately send the patient to a lower ground, and better by carriage than rail-

way. Absolute rest in bed for several days is sometimes necessary. When insomnia occurs, wet packs to the lower extremities or abdomen, bromids and even morphin may be given. The heart can be stimulated with caffein or camphor, but not with digitalis. The bowels should be in good functional order and free diaphoresis encouraged. Externally counter-irritants may be applied to the region of the heart and in severe cases venesection may be performed. The heart must be kept comparatively quiet for several weeks or even for months, after the severer symptoms with dilatation, etc., such as dyspnea, congestion, precordial pain or possibly angina pectoris. He reports a case in detail where a patient 68 years of age, apparently in good health, had marked dilatation from a railroad trip carrying him to an elevation of 8,505 feet. He was quite well during the trip and for the next thirty-six hours, but at its termination he was still at an elevation of 5,315 feet. The symptoms showed themselves while taking a walk.

12. **Sleeping Sickness.**—Twenty out of 34 cases revealed the presence of the trypanosome in the cerebrospinal fluid in sleeping sickness. Castellani gives it's apparent relations to the disease, which are practically the same as those already noticed in The Journal of July 4, p. 64. In a note by Sir Michael Foster it is stated that Col. Bruce, R.A.M.C., who has been continuing the investigation begun by Dr. Castellani, finds the tryaposoma in every case in the fluid obtained by lumbar puncture (38 cases), and has found it in the blood of 12 out of 13 cases.

14. **The Sugar Test.**—The drawback to the original method of Fehling is the formation and suspension of red cuprous oxid in a blue solution. It occurred to Vasey that instead of adding a reagent to form a soluble compound to the cuprous oxid as it is produced in Pavy's and Gerrard's processes, an inert powder, preferably of a clear white color, may be employed, so as to entangle the precipitated oxid and carry it rapidly to the bottom of the solution, leaving above a clear liquid in which the faintest trace of blue can be seen. He found that precipitated chalk or barium sulphate fulfilled the requirements admirably. To the measured quantity of Fehling's solution (generally 10 c.c.), suitably diluted, he adds about two teaspoonfuls of a finely precipitated calcium carbonate or barium sulphate. The mixture is then raised to the boiling point, being gently stirred with a glass rod during the whole time. The solution in which the sugar has been dissolved is then run in after the usual manner. It will be found that the red cuprous oxid will be deposited on and evenly distributed through the chalk slime or barium sulphate, which rapidly subsides so that the true color of the clarified supernatant liquid is quite easily seen. In this way the exact point of transition from a trace of blue color to a colorless solution can be sharply noted. The process is rapid and extremely accurate according to a number of estimations made by him with standard solutions of sugar, diabetic urines, etc., and he thinks it will be found convenient in clinical practice.

Journal of Tropical Medicine, London.

June 15.

16 On Pre-pupal Changes in the Larvæ of the Culicidæ. G. M. Giles.
17 Typhoid Fever Among the Natives of Southern China. J. Preston Maxwell.
18 Tropical Hygiene. (Continued.) W. J. Simpson.

Hospitalstidende, Copenhagen.

Last indexed XL, page 682.

19 (XLVI, 4.) *Bactericidal Properties of Milk. Betzy Meyer.—Bidrag til Kendskab om Melkens bact. Evne.
20 Sanatoria and Hospitals. M. Hindhede.—Om Sanatorier og Sygehuse.
21 (Nos. 5-6.) *To Preserve Color of Anatomic Specimens. M. Claudius.—Metode til Opbevaring af anatomiske Praeparater.
22 *Joint Participation in Osteosarcomata of Long Bones. V. Schalemose.—Om Ledtilfaelde ved Osteosarkomer i de lange Rorknogler.
23 (Nos. 7-8.) *Tilfaelde af infrapapillaer Duodenal-Stenose og Tetani behandlet med Gastroenterostomi. A. Madsen.
24 *One Danger in Use of Bag Dilator. Niels Muus.—En Fare [illegible] Ribes Ballon.
25 Re[illegible] Hansen.—Bygningslov-
26 ([illegible] Tuberculosis to Cattle. J. Fibiger.—Om Overforelse af Menneskétuberkulose til Kvaeget.
27 *Om Hyperaciditens-Etiologi. A. Borgbjerg.
28 (No. 12.) Hemoglobinometer. F. Tobiesen.
29 (Nos. 13-14.) Hysteria, Suicide and Simulation. Friedenreich.—Hysteri, Mordforsog og Forsog paa Selvmord. Simulation.
30 *Clinical Picture of Febrile Epidemic Cerebrospinal Meningitis. Sorensen. (Commenced in No. 10.)
31 (No. 15.) 2 Tilfaelde af Ulcus ventriculi perforans. T. Rovsing.
32 (No. 16.) *Bromid and Salt Starvation Treatment of Epilepsy. C. Madsen.—Om Epilepsibebandlung med Bromnatrium i Forbindelse med Klornatriumfattig Kost.
33 (Nos. 17-18.) Automatisme ambulatoire. F. Hallarger. One case. Railroad conductor.
34 *Case of Lupus Cured with Ethyl-Chlorid Refrigeration. P. Nordentoft.—Tilfaelde af Lupus vulgaris faciei behandlet med Frysning.
35 Are Chilblains a Tuberculide? G. E. Permin.—Er Erythema pernio (Frosten) et tuberkulost Exantem?

19. **Bactericidal Power of Fresh Milk.**—Nineteen series of experiments are described which illustrate that "living" milk, that is, freshly milked or at least within five or six hours, has bactericidal power for the bacteria usually encountered in milk and also for the diphtheria bacillus. The growth of the bacteria is not affected by immediate transferrence of the milk to a low temperature. The number of germs constantly diminished in the milk as it stood for the first few hours, after which they constantly increased.

21. **To Retain Color of Anatomic Specimens.**—Claudius points out that in the ordinary methods of preserving specimens the hemoglobin is soon dissolved or discolored, and with it is lost the natural appearance of the tissues. He has succeeded in preserving the color of the hemoglobin by transforming it into a carbonic oxid combination which is much more resistant and stable. This is done by saturating the specimen with illuminating gas, which always contains a certain percentage of carbonic oxid. The specimen is placed in a saturated solution of ammonium sulphate, filling about one-third of the tight vessel, and then the gas is introduced. Specimens thus prepared are as bright to-day as when dissected out fourteen weeks ago.

22. **Joint Involvement in Sarcoma of the Long Bones.**—This communication from the hospital in charge of Oscar Bloch mentions that in 30 cases of osteosarcoma of the long bones, in 15 the affection at first presented the clinical picture of an inflammatory arthritis, and in 6 of the latter the knee was involved and supposed to be the sole lesion at first. In differentiating, the patient's constitution, age, sex, family antecedents or preceding trauma afford no characteristic data, but tuberculosis, malignant tumors, syphilis and tabes must be excluded. Fever may or may not be present in case of osteosarcoma. The pain is occasionally characteristic, but its radiation to a sound knee may be deceptive. The pain in case of a sarcoma usually starts always at the same point and spreads thence like a neuralgic pain along certain nerve tracts, and occurs spontaneously, both at rest and during exercise, sometimes most severe at night. When such pains are accompanied by an apparent joint affection, resembling a white swelling or hydrarthrosis, the possibility that the affection may be of a sarcomatous nature should suggest itself. Usually, however, the pains are those of any inflammatory joint affection. The irregular shape of the tumor and its irregular consistency are important signs of sarcomatous involvement, also the infiltration of the lig. cruciata, causing the filling out of the popliteal space. This does not occur to the same extent in case of synovitis or tuberculosis. The movability of the joint is frequently retained and is important for the differentiation. The sarcomatous lesion is not benefited by immobilization, elevation and repose like an ordinary arthritis, and suffers when a compressing bandage is applied, edema usually forming around the edges of the bandage. These differentiating signs may be all absent, but they are encountered in a certain proportion of cases.

23. **Duodenal Stenosis Below the Papilla.**—When the stenosis is above the papilla the clinical picture resembles that of pyloric stenosis, but when it is farther along in the intestine the characteristic symptoms are admixture of bile with the stomach contents, alternating positive and negative findings of free hydrochloric acid, and more or less pronounced acholia of the feces. These symptoms were all combined in the case described by Madsen. The patient was a field hand, 41 years

old, the disturbances dating from a little more than a year before. They commenced with severe pains in the cardia evening and night, obstinate obstipation and progressive weakness and emaciation. One day, after severe vomiting, an attack of tetany developed. He was treated by gastroenterostomy, and after a period of improvement died in cachexia.

24. **Danger from Introduction of Bag Dilator.**—Muus warns that it is wise to determine whether the head is movable before attempting to introduce the dilatable bag. In a recent experience the head was immovable and the forceps slipped, perforating the uterus wall.

26. **Transmission of Human Tuberculosis to Cattle.**—Fibiger reviews the various reports that have appeared in the last year or two on the communicability of human tuberculosis to cattle. He finds that various authors have reported 61 attempts at inoculation of cattle with human tuberculosis, with positive results in 41, that is, tuberculosis was induced in 51 out of 81 animals in these 41 experiments. In 74 experiments on 108 cattle, swine and goats the results were positive in 52, that is, on 73 of the animals. Consequently, two-thirds of all the experiments were successful and two-thirds of all the animals were infected. Koch's assertions on this subject are therefore untenable. The tuberculosis is generally restricted to the part or organ inoculated, but occasionally the infection spreads and the disease becomes universal. As a rule, human tuberculosis is not so virulent for cattle, but there are numerous exceptions in which the disease develops as rapidly and with as much intensity as from virulent bovine tuberculosis. Fibiger states that besides the animals mentioned above, dogs, cats, sheep, horses, asses and monkeys have been inoculated with human tuberculosis and always with a certain proportion of positive results. The material with which the animals were inoculated included tuberculous sputa, scraps of tuberculous organs, cultures of tubercle bacilli and tissue from lesions in tuberculous meningitis, arthritis, synovitis and lymphadenitis, as well as pulmonary and renal tuberculosis. On an average 45 to 57 per cent. of the inoculations under all these varied circumstances resulted positively. Fibiger refers to his own extensive experiments, reported last year in the *Hospitalstidende* No. 37 and the *Berliner Klin. Wochft.* No. 38, which confirm the results obtained by others, and are included in the above figures. He remarks in conclusion that he can not accept without some reservations Behring's statement that cattle can be rendered immune to human tuberculosis by inoculation with bovine tubercle bacilli and *vice versa.* He also believes that the bacilli of bovine tuberculosis are more dangerous for man than human tubercle bacilli.

27. **Etiology of Hyperacidity.**—Borgbjerg did not find neurasthenia, hysteria nor hypochondria in any one of the 93 cases of hyperacidity which form the basis for this article. On the other hand, constipation was almost constant. In 99 cases of severe constipation in women he found hyperacidity in 33, that is, in 33.3 per cent., while in 68 cases of constipation in men there was hyperacidity in 60, that is, in 88.2 per cent. In 25 per cent. of the male cases there was abuse of tobacco or alcohol, of tobacco alone in 10 and of both combined in 2. In 20 cases of hyperacidity without constipation there was abuse of tobacco or alcohol in 50 per cent., and all were improved by suspension or reduction of the tobacco or alcohol. In one case the hyperacidity could be explained by hasty eating and insufficient mastication (during a trip to America, he qualifies, in parenthesis). In another there was dilatation of the stomach, which subsided under careful dieting. He found "nervous" symptoms in only 6 cases, and not pronounced in any. He concludes with the description of a case in which the hyperacidity and headache were evidently of reflex origin from a small reducible inguinal hernia; both vanished as soon as a truss was worn.

30. **Clinical Picture of Cerebrospinal Meningitis.**—In 1898 an epidemic of 161 cases of cerebrospinal meningitis was observed at Copenhagen between April and July. Sorensen reviews the clinical picture in 60 of these cases, comparing it with the autopsy findings in 19. Lumbar puncture was done in 51, but no fluid could be obtained in 17. In 31 of the others examined under the microscope the meningococcus was found in 27. In the cases in which the onset was severe and the disease fatal in a month or less, meningitis was always found, while in the cases with a slower course there was only hydrocephalus. No less than 4 of the 19 cases that came to autopsy showed tuberculous lesions. Hence the finding of tubercle bacilli in the cerebrospinal fluid does not necessarily exclude epidemic meningitis. He describes the particulars of a large number of cases, with 23 temperature curves.

32. **Deprivation of Salt in Treatment of Epilepsy.**—Madsen thinks that the results observed to date indicate that the bromids actually take the place of sodium chlorid in the organism when the latter is deprived of its ordinary supply of salt. He has followed Balint's directions for bread with sodium bromid instead of salt, in a number of cases of epilepsy, and tabulates 7 in detail. Out of the total number only one had any more seizures during the five to seven months following, although previously they had had from 1 to 28 a month. The one patient in whom the seizures recurred had only 2 in the course of five months afterward, to 34 in the preceding nine months.

34. **Lupus Cured with Ethyl Chlorid Refrigeration.**—Nordentoft extols the convenience and inexpensiveness of this method of treating facial lupus with which he had been eminently successful in a case. Dethlefsen first announced the efficacy of this treatment and reported a case in 1900 and one more in 1901, but has not published the remote results. The patient in the case here illustrated was a woman of 64, who had suffered for years from lupus of the nose. The cuts show that she had entirely recovered after 48 seances, at first daily and then once a week.

Archiv f. Allg. Pathologie, Etc. (Virchow's), Berlin.

Last indexed page 65.

36 (CLXXII, 1.) Hermaphroditismus verus. W. Simon (Königsberg). One case.
37 Study of Fat Formation and Disappearance. F. Hagemeister. —Zur Kenntnis des Fattschwundes und der Fettbildung in ihrer Abhängigkeit von Circulationsstörungen.
38 *Zur Kenntniss der Banti'schen Krankheit und Splenomegalie. A. Borissowa.
39 Ueber Meningo-Encephalitis beim Kaninchen (in the rabbit). P. Misch.
40 Ueber die Rachitis der Affen (in monkeys). D. v. Hansemann.

38. **Banti's Disease and Splenomegalia.**—In the case of Banti's disease reported, the endothelium of the venous capillaries of the spleen was much swollen and contained numerous red corpuscles and fragments giving the iron reaction. This has never been observed before, Borissowa states. The bone marrow was apparently normal only that the elements were more crowded than usual, actually suggesting exaggerated activity on the part of the marrow.

Centralblatt f. d. ges. Therapie, Vienna.

41 (XXI, 1-2.) Zur Pathogenese und Therapie der nervösen Dyspepsie. W. Zweig (Vienna).—"Only specific treatment is rest for body and mind."
42 Susceptibility of Organs and Tissues. R. Kraus.—Ueber Empfindlichkeit der Organe und Gewebe für Bakterien und Toxine.
43 Therapeutische Kleinigkeiten (trifles). M. Horovitz.
44 (Nos. 3-4.) Aims of Balneo-Therapy. E. H. Kisch (Marienbad).—Ziele der Balneotherapie.
45 Treatment of Rectal Fistulæ. J. Sternberg (Vienna).—Ueber die Behandlung der Mastdarmfisteln.
46 To Harden Children. B. Buxbaum.—Zur Frage der Abhärtung.

Muenchener Med. Wochenschrift, Munich.

47 (No. 20.) Commendation of Witzel's Ether-Drop-Narcosis. F. Berndt (Stralsund).—Zur Empfehlung der W. Aethertropfnarkose.
48 Appendicitis und Eingeweidewürmer (helminths). W. Oppe (Dresden).
49 Mouth Murmur. G. Fischer.—Das Mundhöhlengeräusch. (Commenced in No. 19.)
50 Estimate of Value of Sanatorium Treatment for Lung Disease. F. Kohler (Holsterhausen).—Die Bewertung der modernen Lungenheilstattenbehandlung im Lichte der Statistik, ihrer Praxis und ihrer Aufgaben. (Commenced in No. 19.)
51 Physiology in Medical Training. J. Rosenthal.—Die Stellung der Phys. in med. Unterricht.
52 (No. 21.) Immediate Delivery the Best Treatment for Eclampsia. E. Bumm (Halle).—Die sofortige Entbindung ist die beste Eklampsiebehandlung.
53 Hysterotomia vaginalis anterior. M. Simon (Nuremberg). Three cases of conservative vaginal Cesarean section.

54 Zur Therapie der [illegible] Thorn.
55 *Lysol-Vergiftung [illegible]
56 *Vegetarian Diet [illegible] (Munich).—Die Anwendung [illegible]r Praxis des Frauenarztes.
57 Injuries of Uterus. Osterloh (Dresden).—Verletzungen der Gebärmutter.
58 *Protracted Lactation. Nussbaum.—Ueber lange anhaltende Funktion der Milchdrüsen.
59 *Aseptischer Dilator für die Cervix Uteri mit auswechselbarem Laminariastift in auskochbarer Hülle. B. Müller (Hamburg).
60 Ein einfacher, praktischer Uterus-Dilatator. Krull (Dresden).
61 *Blood Agar for Differentiation of Streptococci. H. Schottmuller.—Die Artunterscheidung der für den Menschen path. Str. durch Blutagar.
62 (No. 22.) *Ueber Nekrose der Gallenblase (of gall bladder). Czerny (Heidelberg).
63 Die chirurgischen Behandlung des akuten und chronischen Choledochus Verschlusses durch Stein und Tumor. H. Kehr. Address delivered at Washington, D. C., May 13.
64 *Ein mit Talmascher Operation behandelter Fall von Synechia pericardii. P. Clemens (Freiburg).
65 Commendation of Bier's Passive Hyperemia. Habs.—Ueber die Biersche Stauung.
66 Weight-Bearing Stumps Below the Knee. Amberger (Rehn's clinic, Frankfurt).—Zur Kasuistik der tragfähigen Unterschenkelstümpfe.
67 Otiatric Casuistik. Bezold.—4 Operationsfällen auf otiatrischem Gebiet, 2 Neubildungen, einen Gipsabguss im Gehörgan und einem Cholesteatom mit Eitersenkung bis zur Skapula und Klavicula.
68 Acute Necrosis of Mastoid Process and Temporal Bone After Scarlet Fever. G. Heermann (Kiel).—Ueber akute Nekrose des Warzenfortsatzes und Felsenbeins nach Scharlach.
69 Modified O'Dwyer Gag. A. Rahn.—Die modifizierte O'D. Mundsperre.
70 Report of the Hamburg "Milk Exposition," May 2-12.
71 (No. 23.) *Operation for Detachment of Retina. L. Müller (Vienna).—Ein neues Operationsverfahren zur Heilung der Netzhautabhebung.
72 New Staining Reaction, P. Erdmann and H. Winternitz (Halle).—Ueber das Proteinochrom, eine klinisch und bakteriologisch bisher nicht verwertete Farbenreaktion.
73 *New Views of Hay Fever. A. Thost (Hamburg).—Neuere Erfahrungen über das Wesen und die Behandlung des Heufiebers.
74 Thymus Death. Leubuscher (Meiningen).—Fragliche Todesursache im Säuglingsalter. Two cases.
75 Ueber Diabetes insipidus. A. Wolff. Two cases.
76 Ueber cirkumscripte tuberkulöse Meningitis. A. Saenger.
77 Ueber die Ankylostoma-Gefahr in Kohlengruben. J. Iberer.
78 Prostata und Albuminurie. C. Kruger.
79 Die Chloroform-Nasen-Maske. C. Reissig (Hamburg).
80 Geschlechtskrankheiten (venereal diseases) und Prostitution. Jordan (Heidelberg).

55. **Lysol Intoxication.**—After observing a fatal case of lysol intoxication, Hammer experimented with it on laboratory animals and looked up the subject in the literature. He is convinced that in his case some of the 1 per cent. solution of lysol injected into the uterus on account of a febrile condition following delivery with placenta previa, was aspirated into a vein. The lysol was thus carried to the brain and caused symptoms of collapse. These subsided, but a part of the solution must have remained in the vein and caused erosion of the endothelium with local thrombosis later. This thrombosis gradually extended centralward with fatal results. The solution of lysol for intrauterine irrigation in obstetric cases should always be weak and never be used under strong pressure. Especially in case of placenta previa great caution is necessary on account of the aspirating tendency of the gaping veins.

56. **Vegetarian Diet in Gynecology.**—Theilhaber attributes many of the ills that female flesh is heir to, especially in the well-to-do classes, to over-eating. He recommends a varied vegetarian diet, that is, excluding all parts of the dead animal, but allowing milk, eggs, etc., as products of the living animal. His experience includes 300 cases, but only 200 carried out his instructions for six months, at least, as directed. He has found this diet very valuable in various nervous affections, in the troubles of the menopause, in nervous insomnia, pruritus vulvæ and general pruritus, hemorrhoids, etc., and in one case of protracted galactorrhea, and thinks it would be advantageous in pregnancy nephritis or neuroses, but has had little opportunity to test the latter. In case of constipation or flatulence, the gas-producing substances must be excluded, but a careful selection will render the vegetarian diet very useful under these circumstances. Obese patients lost flesh, but others did not, as a rule, and none exhibited any loss of strength. He refers to the endurance of the Japanese, who eat little meat, as also the Trappist monks. He thinks that time will yet show that many obstinate nervous affections may be cured by abstention from meat.

58. **Protracted Lactation.**—In Nussbaum's two patients the galactorrhea continued for a year or two after the child had been weaned, reducing the patient to emaciation. The morbid tendency was cured by a compressing bandage, mild laxatives and small repeated doses of antipyrin. Zeitlin has published in a Russian journal a case in which the mammary glands continued their secretion for five years, although the patient had suffered from a metritis dissecans and amenorrhea in the interim.

59. **Aseptic Dilator for the Cervix.**—Müller uses a laminaria tent enclosed in a rubber cover. The latter is sterilized by boiling. The tent is held in place with a Hodge ring pessary, and a rubber bulb and tube supplies the moisture to the laminaria inside its rubber cover.

61. **Differentiation of Streptococci with Blood Agar.**—The use of blood agar has rendered possible the separation of streptococci into two groups, of which the one found in erysipelas is more malignant. The fact that the growth of the other is checked to such an extent by the blood agar justifies the hope that affections due to this germ, which Schottmuller calls Strept. mitior viridans, may prove to be amenable to serum treatment. He has also succeeded with the blood agar in differentiating a hitherto undescribed variety, the Streptococcus mucosus, which he isolated in 7 cases, all but 2 fatal.

62. **Necrosis of Gall Bladder.**—Czerny reports 2 cases, one terminating fatally. Both belong in the class of masked gallstone affections without characteristic colics. He operated on both, one requiring a second intervention. He found at the autopsy of the one and at the second operation in the other case that he had overlooked a gallstone. He usually operates conservatively on the gall bladder, restricting his intervention to mere cholecystostomy with water-tight drainage and suspension of the gall bladder. The fistula heals in about three weeks, and 85.7 per cent. of all his gallstone patients have been permanently freed from their disturbances by this easy and comparatively harmless intervention. He describes his technic in detail.

64. **Adhesion of Pericardium Treated with the Talma Operation.**—As a last resort, the Talma operation was performed, but without results, except a temporary improvement.

71. **Operative Treatment of Detachment of Retina.**—Müller's experience has shown that the cause of this condition is either an inflammatory exudate in case of choroiditis or a hemorrhage or a transudation due to venous congestion in the choroid, the precursor of acute, circumscribed atrophy of the choroid, and implicated in the tension. There is also a possibility of laceration of a coat of some vessel. The transudation may be due to compression of the vessels in the choroid by a tumor, or it may be the result of some affection of the blood, as in case of Bright's disease. The operation he suggests and has successfully performed on 7 patients, aims to put an end to the tension of the choroid noted in high myopia, and also to the distention and stretching of the normally located retina. It consists in excision of a strip of the sclerotic coat, 8-10 mm. wide by 20 in length, from the outer portion of the posterior segment, leaving the choroid intact and only allowing so much of the subretinal fluid to escape as is required by the reduction in size of the capsule of the eyeball. The rest is readily absorbed. The details of the operation are described at length, with the clinical cases in which it has been performed to date. The results, he thinks, justify him in announcing this method of treating detachment of the retina as causal and effective. Neither the duration of the detachment nor the degree are any obstacles to the complete and permanent reposition of the retina by this method. The restoration of vision depends on the progress of the accompanying anatomic lesions. Detachment of many years' standing offers little prospect of restoration of much vision, and when the detachment occurs at the macula, restoration of function can scarcely be anticipated for the latter. The operation includes temporary resection of the wall of the orbit.

73. **Effective Serum Treatment of Hay Fever.**—Dunbar's announcement that he had succeeded in isolating the substance

and sartorius forward and suturing them to the median and lateral margin of the patella. These interventions required three months, and now, fifteen months later, the boy can stand erect and walk with a cane out of doors and in the house without. He can flex his knee to 45 degrees, extension is perfect and with nearly normal strength. The plaster cast after tendon grafting is left for five weeks, during which the patient remains in bed. The after-treatment with massage, gymnastics, electrotherapy, etc., is not merely for the purpose of strengthening the muscles, but also to educate the corresponding nerve centers to their hitherto missing functions. He makes three lengthwise incisions, the first exposes the patella, its ligament and the quadriceps tendon. The second incision, back of the median condyle, opens up widely the sartorius, and its tendon is isolated and detached. The third incision is made to expose the tendon and belly of the biceps. The terminal tendon is detached and the belly of the muscle mobilized. From the lower end of the first incision a passage is made with a blunt instrument, beneath the fasciæ, through which the tendons are brought forward. As soon as the flexion is corrected the tendons are sutured side by side to the upper edge of the patella and from there downward near the median line as far as the patellary ligament, under moderate tension. The tendons must be fastened so as to act as nearly in a straight line as possible. The incisions are then completely closed; he never tampons.

96. **Migraine.**—Karplus thinks it important to distinguish between the genuine, inherited migraine and the merely symptomatic. For the former speak the appearance at an early age, the constancy of the recurrences and their similarity, and the family history. Genuine migraine is more frequent in women than in men, while paralysis and tabes are more frequent in the latter. In the treatment of genuine migraine removal of any pronounced source of peripheral irritation may have a favorable effect, as also all measures that tend to improve the general health, with avoidance of occasional causes and prophylactic doses of some sedative. It is possible that some drug to act on the vessels might be useful, but it would be dangerous to experiment during an attack. A prophylactic course of small doses of nitroglycerin or theobromin is theoretically justifiable during the intervals. Frequent and severe attacks of migraine probably contribute to deterioration of the walls of the cerebral blood vessels in time. A migraine subject is a chronically diseased patient and needs a certain amount of psychic treatment and tactful sympathy, too often neglected by the physician and rich in its rewards to charlatans.

100. **Blue Light Treatment.**—Kaiser gives illustrations of the apparatus for the production of blue light and of some of the patients whom he has treated by this means. He thinks that his experience with ordinary and erythematous lupus has established that the metabolism is powerfully stimulated by reflex action from the blue rays. The influence of these visible chemical rays is directly proportional to the distance and intensity of the light source. They penetrate blood-filled tissues readily and favor absorption, relieve pain and, when concentrated, induce actual anesthesia.

102. **Phorxal, a New Blood Food.**—Stichl has charge of the Mariagrün sanatorium near Gratz, and has been much pleased with the results attained with this new preparation of blood. He has administered it in 50 cases and found that it has a marked action on the blood, rapidly increasing the proportion of hemoglobin and improving the appetite and assimilation. The patients gained from 2 to 6 pounds a week in many instances after this tasteless powder was added to their food. There were no by-effects from its use, and he concludes by recommending it as a very inexpensive and efficient means of improving the composition of the blood in severe anemia and raising the vital energies of the nervous system in nervous dyspepsia, neurasthenia, hysteria, etc. He shows that in composition and mode of absorption it differs from other preparations of its kind.

105. **Purpura Hemorrhagica.**—In 3 of the 5 cases described the purpura developed independently, and in 2 others in connection with malaria; in one the hemorrhages seemed to appear vicariously in place of the intermittent febrile attacks. All were treated with lemons, six to ten a day, in the 2 last cases associated with Fowler's solution or aspirin. The lemon juice seemed to be promptly effective, although 2 of the idiopathic cases were extremely severe. One developed with a febrile bronchial catarrh and was followed by suppuration of a gland in each axilla. All are described in detail. No injurious by-effects were noted from the lemon treatment, although in large doses it had an evident laxative action. He mentions in conclusion that a popular remedy against malaria on the Roman Campagna is to stew lemons, sliced with the skin, and take the filtrate by the tablespoonful. He has repeatedly found this decoction beneficial in malarial dyspepsia.

Zeitschrift f. Heilkunde (Chiari's), Prague.

Last indexed XL, page 134.

111 (XXIII, Nos. 10-12.) Zur Kenntniss tertiärer Läsionen bei Tumor cerebri. A. Fuchs (Vienna).
112 Ueber Hydranenkephalie (Cruveilhier). H. Kluge (Innsbruck). Eight cuts.
113 *Die Pathologie der Bewegungsstörungen (motor disturbances) bei der Pseudobulbarparalyse. F. Hartmann (Gratz). Seven cuts.
114 *Ueber Ochronose. H. Albrecht.
115 Ibid. E. Zdarek.
116 *Affections Due to Pneumonia Bacillus. Milan Sachs.—Zur Kenntniss der durch dem Pneumoniebacillus (Friedländer) verursachten Erkrankungen.
117 Relations Between Toxin and Antitoxin. R. Kretz (Vienna). Beziehungen zwischen Toxin und Antitoxin.
118 Zur Kenntniss des Lungencarcinoms. P. Dömeny (Vienna).—Ten cases; five cuts.
119 *Die Klinik der sogen. Tumoren des Nervus acusticus. F. Hartmann.
120 Wesen der europäischen Chylurie. K. Franz and K. Stejskal.

113. **Pseudo-Bulbar Paralysis.**—This elaborate article by Hartmann is accompanied by 17 photogravures and a bibliography of 104 references. It is based on the study of 8 cases personally observed and analyzes the motor disturbances of this condition from every point of view with a long array of summarized conclusions.

114. **Ochronosis.**—Albrecht states that he knows of only 6 cases on record of this abnormal dark staining of the tissues, especially of the cartilages, first described by Virchow. He has recently observed a case in a man of 41, a consumptive, with melanuria and pigmentation of the ear. At the autopsy blackish gray or black spots were found throughout the vascular system, accompanying evidences of atheroma. The darkest spots were on the cartilages near the bones and in the joints, but the latter all appeared otherwise sound. Chemical tests showed that the pigmentation was not due to melanin nor to hematin or its derivatives.

116. **Virulent Affections due to Pneumonia Bacillus.**—The author of this article is Dr. Milan Sachs, whose tragic death from laboratory plague was recently reported. He described here a case of rapidly fatal infection with Friedländer's bacillus by way of the urethra, the prostate first invaded. An abscess formed which perforated into a vein, with resulting general infection, endocarditis, meningitis and multiple abscesses in the kidneys. The bacilli were found in the blood in enormous numbers.

119. **Tumors of the Auditory Nerve.**—Hartmann reviews 26 cases on record and 3 personally observed. The most pronounced type of the lesion is in cases with complete nerve deafness accompanied by all kinds of mild functional disturbances on the part of the organs occupying the posterior cranial fossa. The lesion first manifests itself by slowly encroaching nerve deafness, associated with slight dizziness, attacks of headache or paresthesia and pains in the trigeminus domain and possibly slight hemiataxia. Slowly progressive nervous deafness with one or more of these symptoms should suggest a tumor in the acustico-cerebellar space. Later choked disc becomes apparent, with motor and sensory disturbances in the extremities and finally disturbances in the functions of the other cranial nerves, predominating on the same side. A course of two to eight years may be anticipated, but early operation is justified by the precision with which the lesion can be located and the exceptional readiness with which the tumor shells out.

Zeitschrift f. klin. Medicin, Berlin.

Last indexed XL, page 1765.

121 (XLIX, 1-4, Runeberg Festschrift.) *Effect of Morphin on Secretion of Gastric Juice. H. Holsti.—Wirkung des Morphiums auf die Absonderung des Magensaftes.
122 Changes in Spinal Cord in Chronic Alcoholism. E. A. Homen.—Die Veränderungen im Rückenmark bei chron. Alkoholismus.
123 *Displacement of Kidney from Clin.-gynec. Standpoint. O. Engstrom.—Ueber Dystopie der Niere, etc.
124 Dilatation of Esophagus. R. Sievers.—Zur idiopathischen Oesophagus-Erweiterung. One case.
125 *Ueber das sogen. einfache Entero-Cystom und seine Bedeutung als Ursache von Darmverschluss. A. Krogius.
126 *Ueber die Häufigkeit und klin. Bedeutung der Pupillen-Differenz, nebst einigen Bemerkungen über den sogen. "Springende Mydriasis." A. O. Schauman.
127 *Transmission of Scarlet Fever by Milk. K. Ekholm.—Zur Scharlachübertragung, etc.
128 Importance of Deformities in Spine and Thorax for Diagnosis of Syringomyelia. J. Hagelstam.—Ueber die Bedeutung der Difformitäten, etc.
129 *Cerebral Affections After Carbonic Oxid Poisoning.—C. Sibelius.—Zur Kenntniss der Gehirnerkrankungen nach Kohlenoxydvergiftung.
130 *Late Disturbances After Tracheotomy. W. Pipping.—Spätstörung nach der Tracheotomie.
131 Scirrhus mammæ und Adenocarcinoma nasi bei derselben Kranken. W. Zilliacus.
132 *Round Ulcer in Finland. W. Backman.—Ueber die Verbreitung der runden Magengeschwurs in Finland sowie Einiges über seine Aetiologie.
133 Fall von Diabetes insipidus. T. W. Tallqvist.
134 *Albumin Metabolism in Anemia. E. Rosenqvist.—Ueber den Eiweissstoffwechsel bei der perniciösen Anämie, mit specieller Berücksichtigkeit der Botriocephalus-Anämie.
135 *Zur Frage der Pathogeneität des Balantidium coli. E. Ehrnrooth.
136 Paralysie douloureuse (Chassaignac). E. Lövegren.
137 *Rigid Spine. V. O. Siven.—Zur Kenntniss der sogen. chron. ankylosirenden Entzündung der Wirbelsäule.
138 *Casein Enemata and Phosphorus Metabolism. R. Ehrstrom.—Nährwerth des Caseinklystiere nebst Bemerkungen über den Phosphorstoffwechsel.
139 Ueber den Werth der Hämotokrit-Untersuchungen. E. Aspelin.
140 Rupture of Aorta in Apparently Healthy Boy of 13 After Long Skating. E. Wasastjerna.—Aortaruptur nach Schlittschuhlaufen, etc.

121. **Effect of Morphin on Gastric Secretion.**—The twenty articles in this souvenir number of the *Zeitschrift* are all by present or former pupils of Prof. J. W. Runeberg of Helsingfors, Finland. Holsti has studied the effect of morphin on the gastric secretion in 10 subjects. His general conclusion seems to be that the injurious influence of the drug is due more to its disturbing action on the motor function than to any influence on the secretion of gastric juice.

123. **Ectopic Kidney from Gynecologic Standpoint.**—In one of the 3 cases described one kidney was low in the small pelvis. In the second the left kidney was at the umbilicus and in the third a horse-shoe kidney was located very low, but the patient had borne four children. A number of cases of a congenital pelvic kidney obstructing delivery are on record. Even if the birth proceeds normally, the results may be disastrous from compression of the organ by the gravid uterus. Nephrectomy solely on account of interference with childbirth is not justifiable, and there are few instances on record where even restoration to normal position was attempted.

125. **Enterocystoma as Cause of Ileus.**—Krogius has observed a case of this kind and found records of 4 more in the literature. The age was 11 days to 62 years; all the patients were operated on, but all succumbed except one, 15 years old. His own patient was a two-months' infant.

126. **Pupil Aberrations.**—Schauman has noted a difference in the pupils in 723 subjects. The number includes 401 subjects, or 55.5 per cent., with no organic lesions but some neurosis, including 11 with exophthalmic goiter, 4 epileptics and 3 with chorea. In the remaining 322, or 44.5 per cent., there were organic lesions, including tuberculosis in 6.8 per cent. and some vascular affection in 5.5 per cent. When it is not due to an organic lesion it is therefore the expression of an asthenic diathesis or a sign of hereditary degeneracy. Jumping mydriasis is not so rare as generally supposed, he finds. He observed it in 11 cases, all with neuropathic manifestations from childhood. Hysteria was manifest in 3 or 4 and the others were not above suspicion. He does not regard it as a precursor of serious trouble.

127. **Transmission of Scarlet Fever in Milk.**—The milkmaid, a girl of 16, had been treated for a phlegmonous angina, and shortly afterward cases of scarlet fever developed in six families who were supplied with milk from this farm, and only two families with children on this milk route were spared. Two of the adults also suffered from a febrile tonsillitis at the same time. The facts observed suggest a genetic connection with the milk supply.

129. **Carbonic Oxid Poisoning.**—A young man was found unconscious five minutes after he had descended into a cistern in which a coke fire was burning. He recovered consciousness next day, but was totally blind and died in a month. The microscope showed lesions resembling those of a toxic, especially an alcoholic encephalitis. Sibelius remarks that the phenomena observed indicate that the toxic action of carbonic oxid is not essentially the driving out of the oxygen, but rather a primary toxic influence on the central nervous system.

130. **Ultimate Outcome of Tracheotomy.**—Pipping states that only 2 have become tuberculous out of his 67 patients on whom tracheotomy was done. His experience includes 82 cases since 1868. Seven of the patients have died. In 54 followed to date, 31 are free from disturbances of any kind, 20 have some trivial disturbances and one still has a fistula, one a chronic thickening in the right lung and a third is tuberculous, her father a consumptive.

132. **Round Ulcer in Finland.**—Round gastric ulcer is common all over the country, so that every physician averages about one to three cases a year. A collective inquiry among 79 physicians resulted in securing data in regard to 762 cases, including 5 children under 10, 369 women and 361 men. It seems to affect all classes indiscriminately. Traces of ulcer were noted in 2.29 per cent. of 3,577 cadavers, and ulcer was treated in 1.74 per cent. of 11,850 patients at the clinic.

134. **Albumin Metabolism in Pernicious Anemia.**—Rosenqvist's article fills 128 pages and contains detailed bibliographic notes. It is based on a study of the metabolism in 20 cases of anemia due to the bothriocephalus and to a number of cryptogenetic cases of pernicious anemia. In both cases there is a destruction of albumin, manifestly of a toxic nature, and in both there are evidences of phenomena of immunization in time. The destruction of albumin is more constant in the anemia due to the bothriocephalus, and it persists for a time after expulsion of the latter. In both forms of anemia there is also at times an exaggerated elimination of the endogenic purin bodies, a probable indication of exaggerated destruction of nucleated tissues.

135. **Pathogenic Action of Balantidium Coli.**—Ehrnrooth has not found evidences of degenerative or inflammatory processes elsewhere than in the gastrointestinal tract and there they were unmistakably of mechanical origin. Neither the blood nor the organs suggest intoxication from the presence of the balantidium coli. He describes a case in detail, a woman of 52, who for twenty years had suffered from vomiting and abdominal pains.

137. **Rigid Spine.**—From the autopsy of a case and reports of five others Siven has become convinced that this disease is an inflammation of the joints entailing finally complete ossification of the smaller spinal articulations, a chronic ankylopoietic arthritis. The process differs from that of general arthritis deformans.

138. **Casein Enemata.**—Proton is a patented preparation of milk casein. Mixed with milk it forms an excellent material for nutrient enemata, readily absorbed and containing a large proportion of albumin and phosphorus.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

TWENTY-SECOND ANNUAL MEETING OF THE HAMOT HOSPITAL ASSOCIATION, with Reports of Managers and Officers, 1902. Paper. Pp. 71. Erie, Pa.: Herald Printing and Publishing Company. 1903.

A Manual of Surgical Treatment. By W. Watson Cheyne, C.B., M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College, London, and F. F. Burghard, M.D., M.S. (London), F.R.C.S., Teacher of Practical Surgery in King's College, London. In Seven Volumes. Volume VII. The Treatment of the Surgical Affections of the Rectum, the Liver, Pancreas and Spleen, the Genito-urinary Organs, the Breast and the Thorax. Cloth. Pp. 559. Price, $5.75 net. Philadelphia and New York: Lea Brothers & Co. 1903.

Surgical Diseases of the Abdomen, with Special Reference to Diagnosis. By Richard Douglas, M.D., Formerly Professor of Gynecology and Abdominal Surgery, Medical Department, Vanderbilt University. Illustrated by 20 Full-page Plates. Cloth. Pp. 883. Philadelphia: P. Blakiston's Son & Co. 1903.

Index-Catalogue of Medical and Veterinary Zoology. Part 3. (Authors C to Czygan.) By Ch. Wardell Stiles, Ph.D., Consulting Zoologist of Bureau of Animal Industry, and Albert Hassall, M.R.C.V.S., Acting Assistant Zoologist of Bureau of Animal Industry. Paper. Pp. 324. Washington: Government Printing Office. 1903.

The Public Service.

Army Changes.

Movements of Officers of the Medical Department, U. S. A., under orders from the Adjutant-General's Office, Washington, D. C., for the week ending June 20, 1903:

Bosley, John R., contract surgeon, will proceed from Washington, D. C., to Governor's Island, N. Y., and report to the commanding general, Department of the East, for assignment to duty.

Field, Peter C., first lieut. and asst.-surgeon, is granted an extension of fifteen days' leave.

Shortlidge, Edmund D., first lieut. and asst.-surgeon, having completed the duty for which he was ordered to Washington, D. C., June 3, will rejoin his proper station at the U. S. General Hospital, Presidio.

Straub, Paul F., captain and asst.-surgeon, on the expiration of his present leave is directed to proceed to Camp Monterey, Cal., for duty.

Wilson, Roy A., contract surgeon, is granted leave of absence for two months.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending June 27:

Medical Inspector H. E. Ames, commissioned medical inspector from Jan. 20, 1903.

Surgeon C. F. Stokes, detached from the Navy Yard, League Island, and ordered to the Bureau of Medicine and Surgery, Navy Department.

Surgeons C. D. Brownell, S. G. Evans, C. E. Riggs, M. K. Johnson, W. B. Grove, E. O. Huntington, commissioned surgeons from March 3, 1903.

P. A. Surgeon H. E. Odell, commissioned P. A. Surgeon from Nov. 8, 1902.

Asst.-Surgeon J. J. Snyder, detached from the Naval Hospital, Philadelphia, and granted sick leave.

Asst.-Surgeon W. W. Verner, ordered to the Naval Hospital, Philadelphia.

Surgeons W. M. Wheeler, L. Morris, F. T. Pleadwell, C. P. Kindleberger and F. C. Cook, commissioned surgeons from March 3, 1903.

Surgeon G. Pickrell, detached from the *Iowa* and ordered to wait orders.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended June 25, 1903:

Surgeon J. M. Gassaway, granted leave of absence for two days from June 7.

Surgeon Eugene Wasdin, granted leave of absence for three days from June 20.

Surgeon S. D. Brooks, granted leave of absence for one day, June 22.

Surgeon J. H. White, granted leave of absence for one month from July 2.

Surgeon P. M. Carrington, granted six days' leave of absence under Paragraph 189 of the regulations from June 20, 1903; granted extension of leave of absence for seven days.

P. A. Surgeon G. B. Young, granted leave of absence for two months from July 7.

P. A. Surgeon E. K. Sprague, leave of absence for seven days from June 4, 1903, granted under Paragraph 191 of the regulations, amended so as to be for four days only. Relieved from duty at Fort Stanton, N. M., and directed to proceed to Calcutta, India, for duty in the office of the U. S. Consul-General.

P. A. Surgeon S. B. Grubbs, granted extension of leave of absence for seven days from June 23.

Asst.-Surgeon M. K. Gwyn, to report to Asst.-Surgeon V. G. Heiser, recorder of board of examiners, Manila, P. I., on August 8, 1903, for examination to determine his fitness for promotion to the grade of passed asst.-surgeon.

Asst.-Surgeon W. C. Hobdy, to report to P. A. Surgeon L. E. Cofer, recorder of board of examiners, Honolulu, H. I., on August 15, 1903, for examination to determine his fitness for promotion to the grade of passed asst.-surgeon.

Asst.-Surgeon B. H. Earle, granted leave of absence for seven days from June 25.

A. A. Surgeon Bready, leave of absence for three days granted by Bureau letter of June 6 revoked.

A. A. Surgeon B. Y. Harris, granted leave of absence for thirty days from July 22.

A. A. Surgeon C. B. Sweetin, granted leave of absence, on account of sickness, for thirty days from June 10.

Pharmacist G. W. Iltis, to report to P. A. Surgeon W. G. Stimpson, chairman of board of examiners, San Francisco, on June 29, 1903, for the examination to determine his fitness for promotion to the grade of pharmacist of the second class.

BOARDS CONVENED.

Board convened at Washington, D. C., June 25, 1903, for the preparation of sketch plans and memoranda relative to a hospital building at Ellis Island, N. Y. Detail for the board: Assistant Surgeon General L. L. Williams, chairman; Assistant Surgeon General W. J. Pettus; Surgeon G. W. Stoner; P. A. Surgeon J. C. Perry, recorder.

Board convened at San Francisco, June 29, 1903, for the examination of Pharmacist G. W. Iltis, to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the board: P. A. Surgeon W. G. Stimpson, chairman; Asst.-Surgeon C. W. Vogel, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended June 27, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, June 13-20, 3 cases.

California: San Francisco, June 7-14, 1 case.

Colorado: Denver, May 23-June 6, 24 cases.

Georgia: Atlanta, June 3-17, 3 cases.

Illinois: Belleville, June 13-20, 3 cases; Chicago, June 6-20, 6 cases, 1 death; Danville, June 6-13, 1 case.

Indiana: Indianapolis, June 6-20, 3 cases; Kokomo, June 13-20, 1 case.

Iowa: Des Moines, June 13-20, 1 case.

Louisiana: New Orleans, June 13-20, 2 cases.

Maine: Fort Kent and vicinity, June 18, 9 cases.

Maryland: Cumberland, May 1-31, 24 cases, 4 deaths.

Massachusetts: Fall River, June 6-20, 7 cases.

Michigan: Detroit, June 15-22, 7 cases; Flint, June 13-20, 1 case; Grand Rapids, June 13-20, 2 cases; Port Huron, June 13-20, 10 cases.

Minnesota: Winona, June 13-20, 1 case.

Missouri: St. Louis, June 7-21, 18 cases.

New Hampshire: Manchester, June 13-20, 2 cases; Nashua, June 13-20, 1 case.

New York: Elmira, June 13-20, 3 cases.

Ohio: Cincinnati, June 12-19, 7 cases; Cleveland, June 6-13, 1 case; Dayton, June 13-20, 2 cases; Hamilton, June 13-20, 3 cases; Toledo, May 30-June 13, 8 cases, 1 death; Warren, June 13-20, 1 case.

Pennsylvania: Carbondale, June 7-21, 4 cases; McKeesport, June 6-20, 1 case; Pittsburg, June 6-20, 40 cases, 4 deaths, 1 case imported; Philadelphia, June 13-20, 35 cases, 4 deaths.

Tennessee: Memphis, June 13-20, 2 cases; Nashville, June 13-20, 1 case.

Utah: Salt Lake City, June 6-20, 18 cases.

Washington: Tacoma, June 15-22, 1 case; Whatcom, Jan. 1-June 1, 14 cases, 2 deaths.

Wisconsin: Milwaukee, June 13-20, 10 cases.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, March 1-31, 8 deaths.

Austria: Prague, May 30-June 6, 4 cases.

Belgium: Antwerp, May 30-June 6, 3 cases, 1 death; Ghent, May 16-June 6, 4 deaths; Liege, May 23-30, 1 case, 1 death.

Brazil: Bahia, May 23-30, 2 cases; Rio de Janeiro, May 10-27, 7 deaths.

British Guiana: Domerara, Feb. 10-May 16, 344 cases, 2 deaths.

Canada: Hamilton, June 6-13, 1 case; Ontario, April 1-30, 122 cases, 2 deaths; Vancouver, May 1-30, 1 case.

Canary Islands: Las Palmas, May 18-June 6, 37 cases.

Colombia: Bocas del Toro, June 2-9, 4 deaths.

Germany: Strassburg, April 1-30, 13 cases.

Great Britain: Birmingham, May 30-June 13, 9 cases; Bristol, May 30-June 6, 1 case; Dublin, May 30-June 6, 15 cases, 3 deaths; Dundee, May 30-June 6, 1 case; Leeds, May 30-June 6, 40 cases; Liverpool, May 30-June 13, 81 cases, 5 deaths; London, May 30-June 6, 24 cases; Manchester, May 23-June 6, 20 cases, 4 deaths; Nottingham, May 23-30, 2 cases; Newcastle-on-Tyne, May 30-June 6, 2 cases; Sunderland, May 30-June 6, 2 cases.

India: Bombay, May 19-26, 45 cases.

Japan: Kobe, May 9-16, 2 cases; Yokohama, May 16-23, 1 case.

Mexico: City of Mexico, May 31-June 7, 24 cases, 14 deaths.

Russia: Moscow, May 23-30, 8 cases, 1 death; Warsaw, May 16-23, 1 death.

Spain: Cadiz, May 1-31, 1 case.

Straits Settlements: Singapore, April 11-18, 4 cases.

Turkey: Smyrna, April 19-26, 1 death.

Uruguay: Montevideo, March 1-April 5, 22 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, May 10-24, 12 deaths.

Colombia: Panama, June 8-15, 3 cases, 1 death.

Costa Rico: Limon, June 4-11, 4 deaths.

Mexico: Coatzacoalcos, May 30-June 6, 1 case; Tampico, June 6-13, 11 cases, 8 deaths; Vera Cruz, June 6-20, 57 cases, 17 deaths.

CHOLERA.

India: Bombay, May 19-26, 1 death; Calcutta, May 16-23, 71 deaths.

Straits Settlements: Singapore, April 11-18, May 8-16, 30 deaths.

PLAGUE.

Australia: Brisbane, April 11-May 9, 5 cases.

Brazil: Rio de Janeiro, May 10-24, 2 deaths.

India: Bombay, May 19-26, 255 deaths; Calcutta, May 16-23, 47 deaths; Karachi, May 17-24, 136 cases, 127 deaths; Mauritius, May 14-21, 2 cases.

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Addresses.

NEUROLOGIC PROGRESS AND PROSPECTS.

CHAIRMAN'S ADDRESS, DELIVERED BEFORE THE SECTION ON NERVOUS AND MENTAL DISEASES OF THE AMERICAN MEDICAL ASSOCIATION, AT THE FIFTY-FOURTH ANNUAL SESSION, HELD AT NEW ORLEANS, MAY 5-8, 1903.

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CINCINNATI.

INTRODUCTORY.

Mankind in general and practitioners of the healing art in particular may be likened to the different groups of dwellers in a series of narrow and deep valleys surrounded by lofty mountains. Each ordinarily obtains a restricted view of his own valley and sees little or nothing of the others. When by chance or intent they meet on an eminence, which is far above all their natural habitats, their view is not only broader and more accurate as concerns their own individual valleys, but extends in varying degrees over the domains of others.

So it is with the members of our guild, when they rise to a higher intellectual plane at meetings such as this; their respective views broaden and tend to harmonize with those of their fellows, while at the same time the aggregate of their fields of mental vision is vastly augmented.

The general practitioner surveys the domain of the specialist, getting here and there an idea, while the specialist broadens his horizon by contact with the generalist and by a more comprehensive view of the work of his confrères.

GENERAL CONSIDERATIONS.

The classic observations of Broca[1] (1861), establishing a definite cerebral location for the function of articulate speech, were followed up so assiduously, during the next three decades, by numerous investigators, that the period named may be termed the era of gross localization of nervous functions. In marked contrast with that period the past decade may be fitly characterized as an era of progress in knowledge of structural organization of the nervous system.

The biologic law that function precedes and determines structure is here paralleled in the sense that knowledge of function has preceded and led up to knowledge of intimate structure.

Beginning with the demonstration by Cajal[2] (1893-94) of the anatomic individuality of the neuron, the labors of a host of enthusiastic investigators throughout the civilized world have rendered the decade now closing a most memorable one in neurologic progress.

The histologic, physiologic and pathologic fields have been lighted up as never before. A new terminology has been necessitated by the newer knowledge of neuronic architecture of the nervous system; and we find, in consequence, the older terms: areas, masses, nuclei, fiber tracts and reticulum, replaced largely, or at least added to and elucidated, by "neuron," axon, dendrite, collateral process, gemmule, etc.

As one result of all this labor and progress our present-day conceptions of the real nature of many diseases of the nervous system are in marked contrast with those of a former era. To none is this more apparent than to the practitioner, who compares his modern text-books and the literature produced at such gatherings as this with the same sources of information of a decade or more ago.

That this knowledge of intimate structure as related to function, both physiologic and pathologic, is still progressing at a rapid rate is a matter for profound congratulation, since its obvious tendency is to furnish an increasingly definite foundation for the more successful application of therapeutic measures. A second result may be observed in the rather more optimistic views as to the possibilities of prophylaxis and therapy in diseases of the nervous system which pervade the modern neurologic mind.

NEUROLOGIC PROGRESS.

During the past year the progress of neurologic medicine has been satisfactory, though not marked by brilliancy of achievement.

No supreme discovery or demonstration approaching in importance that of "the neuron" has been announced. Yet a steady advance has been kept up along the "firing line," and the skirmishers, represented by the workers in research laboratories, have penetrated farther than ever into the territory of the heretofore unknown with noticeable advantage to the position and strength of the "main army."

While "the neuron" maintains its position as a "star of the first magnitude" in the neurologic firmament, its lustre has been perhaps a trifle dimmed by the observations of Bethe and of Ballance and Stewart on "The Healing of Nerves."[3] Briefly, these appear to affect the neuron doctrine as follows:

1. They indicate that destroyed axis cylinders of peripheral nerves are reproduced, not by down growths from the proximal ends of the cut or degenerated axons, but by proliferation of neurilemma cells of the separated portions of the axis cylinder.

2. These observations also indicate that a peripheral axon (axis cylinder) is not originally a mere outgrowth from a single spinal neuron body (nerve cell), but is a result of the fusion of a chain of cells, the prototypes or

equivalents of other chains represented in the neurilemma.

3. When the axon is destroyed the remaining neurilemma cells take up the task of producing a new one by proliferation and end-to-end fusion of new cells.

Two facts stand out prominently in this connection. First, that these observers admit that development is more or less incomplete unless the newly reproduced distal segment is eventually joined to the proximal end; another illustration of the law that structure is dependent on function.

It will also be noted that these observations apply to peripheral neurons only, and do not in any way affect the status of the central neurons, since their axis cylinders are devoid of neurilemma, and hence must apparently depend on their neuron bodies for trophic influence. Moreover, reproduction of these central axons when once destroyed is almost unknown, only a few observations on the subject existing in the literature (Worcester).[4]

The painstaking and admirable observations of Apáthy,[5] extending over a period of fourteen years and published some six years ago, were claimed by him to show that the entire nervous system is permeated by a network of ultimate fibrillæ passing unbroken through the neurons. They have been in part accepted by Bethe and Nissl, who also consider that the resulting "fibrillary hypothesis" invalidates the neuron doctrine. As these fibrillæ themselves, according to Apáthy's showing, are a product of certain neuron bodies (cells), the conclusion that they are of secondary importance only seems justified at present.

Far from disproving or supplanting the neuron doctrine the "fibrillary hypothesis" of Apáthy seems to the writer to have merely attained the dignity of an appendage to it; an appendage, doubtless of considerable import, it is true, but just how important remains to be determined by its verification in a larger series of organisms than earthworms and leeches.

NEURODYNAMICS.

The nature of nerve force and the conditions of its transmission yet remain an unopened book, of which Professor Loeb[6] has essayed to exhibit to us the title page in his ingenious application of the electro-chemical theory of ions to the dynamic processes of the neuron and muscle cell.

The main landmarks of his hypothesis may be briefly stated as follows:

1. An ion is the electrolytic representative of an atom, but is, theoretically, much smaller in size.

2. Ions, like the electrolytes of which they are the ultimate electrical units, are positive or negative, hence anions and kations.

3. Their function, by their presence in definite proportion in each tissue, is to preserve the "labile equilibrium" of the colloid materials of protoplasm on which its activities depend.

4. Variations in these proportions or attempts to restore the same to normal (through electro-chemical action) give rise to function in the particular tissue that is the seat of such variation at any given time.

5. Hence, the dynamic process of neurons, as of muscle cells, may depend on the proportions of ions of, say calcium, sodium, potassium, etc., that are present at any particular instant.

6. This, if verified, would apparently indicate that the dynamics of function reside in the ions, while the quality and direction of function only are conditioned by the histologic structure and connections of the neuron.

Dercum[7] and others have proposed, some years ago, a theory of "amœboid protrusion and retraction" of neuron processes (gemmules) in order to account for the "make" and "break" of function in physiologic as well as pathologic (functional) states; accounting in this way for sleep and other suspensions of consciousness, as well as for various paralyses of functional character.

While this idea has probably served a good purpose in directing attention to changes in the neuron, as the basis of function, yet the type and nature of the movement referred to is obviously too gross in character to satisfy the demands of the problem.

The bearing of the theory of ions, however, is quite another matter. It is much easier to conceive of an alteration in electro-chemic status as the basis of changes in nervous function than to attribute them to so coarse a process as physical retraction and elongation.

In fact, in commenting on this topic it has been the custom of the writer to say to his classes that, while the theory of physical retraction and expansion is not tenable in this connection, yet it is quite conceivable that a break in chemical relations, a chemical retraction and reapproachment, so to speak, might account more satisfactorily for the facts. The same may be said of an alteration in electro-chemical status, due to variations in ions.

PSYCHODYNAMICS.

The impression that "psychic" activity may exist independently of physical agents still appears to obtain a hold even on some medical minds, and is not confined to the devotees of the various so-called "cults" patronized by the laity and exploited by charlatans.

It seems hardly necessary to say that such independent existence of "psychic" activity has not been demonstrated in fact, and in the nature of things is not likely to be.

CLINICOPATHOLOGIC.

Pellagra has been demonstrated by Ceni[8] in a remarkably complete series of experiments, to be due to infection by micro-organisms belonging to the mould fungi, namely, the *Aspergillus fumigatus* and the *Aspergillus flavescens*. Either species may act in any given case, but seldom both.

These organisms reach the human subject through the medium of infected maize, but are also observed in mouldy bread, etc.

The parasites pass from the intestine in the form of spores, become localized in various tissues and organs (lungs, pleura, pericardium and pia-mater), and there elaborate and emanate very virulent toxines, which give rise to phenomena of general poisoning, as well as to local inflammatory process of a diffuse character.

The nervous symptoms which have led to the classification of pellagra as a nervous disease consist of widespread alterations in sensation, motion and intellect.

Thermalgesia along the spine, numbness and formication of the legs.

Tremor, motor inco-ordination and paraplegic weakness are common.

Apathy, incoherence and melancholic symptoms are noted.

The mortality is high, but recoveries do occur. The importance of the discovery is evident when we realize that: 1. Sixty thousand persons suffer from the disease in Italy alone at the present time. 2. By reason of the fact that the author has devised a plan for the successful treatment of the disease by the serum of immunized goats and horses.

Although limited, so far as known, to Italy and southern France, in which countries it is traceable to the use of unripe and badly kept maize as a food, the disease interests us for three reasons:

1. It affords an example of a distinct neuron degeneration due to a definite organism.

2. The symptoms, strongly suggestive in some cases of ataxic paraplegia (combined sclerosis), in others of paresis, and in others of ankylostomiasis (Harris[9]), may call for differentiation from those affections in this country.

3. Owing to the well-known occasional presence of the aspergillus in the auditory canal, where it has heretofore been considered an object of local rather than of general pathologic import.

MYELITIS.

Acute myelitis, so-called, is one of the diseases of which our knowledge of the pathologic nature is being gradually developed.

The older idea that the inflammation was the primary factor, the vascular disease and softening secondary, has been practically reversed in a large proportion of the cases, thus bringing the subject in line with similar processes in the brain, where the vascular disease (endarteritis and thrombosis) has long been recognized as the primary element in acute softening.

Singer,[10] in a valuable résumé of the subject, reports two autopsies, both showing obliterative arteritis of syphilitic origin, and refers to nineteen others, fifteen of which presented a syphilitic history. His conclusions are:

1. So-called acute myelitis is found on microscopic examination, in the majority of recorded cases, to be not inflammatory, but due to thrombosis of spinal vessels.

2. That by far the most common cause of this thrombosis is syphilitic arteritis, and that senile arterial degeneration forms a considerable proportion of the remaining cases.

3. This view as to the pathology is confirmed clinically by the analogy between this disease and cerebral thrombosis.

Williamson,[11] in 1894, advocated the same views, which are now accepted to a greater or less extent by Gowers, Oppenheim, Marie, Dana, Church and Peterson, though Singer, as above quoted, takes a rather more advanced stand as to the comparative frequency of thrombosis as a cause. A somewhat extensive clinical experience leads the writer to heartily indorse these views of Singer, the bearing of which on our therapy is obviously of great practical importance.

BRACHIAL NEURITIS.

Somewhat analogous to the problems presented by acute myelitis are those relating to the pathology of brachial neuritis, especially of those of uni-radicular type.

E. Farquhar Buzzard,[12] in an important article in *Brain*, reports six carefully worked-out cases, and suggests that vascular lesions, embolic or thrombotic, better explain these cases than the older idea of a neuritis of toxic or "exposure to cold" origin. His conclusions are as follows:

1. "There exists a clinical group of cases in which the symptoms (localized muscular atrophy in shoulder, arm or hand muscles, sensory dissociation and hypesthesia) strongly suggest a more or less complete destruction of functional continuity in one of the spinal nerves forming the brachial plexus.

2. "The objective disturbances of sensibility resulting from this lesion closely conform with those observed by Sherrington after cutting a posterior root in a monkey. They differ in some respects from the anesthesia produced by the division of a peripheral nerve. The objective hypesthesia is not associated with any subjective sensation of numbness, and is consequently overlooked by the patient.

5. "The atrophy of the affected muscles is in excess of what might be expected in view of the fact that many of the muscles receive fibers from two or more spinal nerves.

6. "The condition generally occurs in persons who have at some time been the subjects of a disease affecting the cardio-vascular system. The morbid process is probably vascular in character and may be sudden or gradual in its onset."

PACHYMENINGITIS HEMORRHAGICA INTERNA.

Barratt[13] records an exhaustive series of investigations on man and lower animals, the results of which indicate that intravascular thrombosis is the probable essential lesion leading to the formation of the so-called false membrane in this disease He concludes: "Finally, the view may be advanced that pachymeningitis interna hemorrhagica is a morbid process in which the essential lesion is a separation of fibrin, usually within the blood vessels, on which the other changes in this condition are largely if not chiefly dependent." The article is well illustrated.

LOCAL PANATROPHY.

Sir William Gowers[14] contributes a brief but interesting article under this title.

"In certain areas of the trunk, limbs or face, which vary in diameter from that of a nut to that of an orange, or larger, there seems to be wasting of all the subcutaneous tissues down to the bones, with slight change in the skin, which is then distinctly thinner and slightly discolored. The aspect of the areas may be described as that of a subcutaneous excavation." Even the bones may be affected. The distribution is without definite relation to the muscles or nerve distribution. No hypothesis is advanced as to its cause.

BLOOD CHANGES IN EPILEPSY.

Pugh[15] contributes an important article "On Certain Blood Changes in Idiopathic Epilepsy," based on an investigation of forty cases. His conclusions are:

1. The alkalinity of the blood (in epileptics) in the interparoxysmal period is lower than the average of the control cases.

2. The diminution is gradual and progressive, and is more marked in those cases suffering from gastric catarrh and constipation.

3. There is a marked sudden and pronounced fall immediately prior to the onset of the fit.

4. There is a further fall in the alkalinity after the fit is over; this diminution is seen from three to ten minutes after the attack.

5. This after-diminution depends on the duration and severity of the muscular twitching and on the degree of the alkalinity in the inter-paroxysmal period.

6. There is a gradual return of the blood to its normal alkalinity, which takes place in five to six hours, the rise being more marked in the first hours.

7. If the alkalinity keeps at a low value it may determine the onset of another fit.

8. The diminution after the fit is due to the chemical end products of muscular metabolism, i. e., sarcolactic and carbonic acids and not to substances in direct relation to the epilepsy.

9. The diminution after a nocturnal fit takes a longer time to return to the normal than the diminution after a day fit.

10. It is impossible to elevate and maintain the alkalinity within physiological limits for any appreciable length of time by the administration of drugs.

11. There is a leucocytosis after a fit. The increase is due to the small hyaline cells, also to a less extent to the large hyaline cells. The polymorphonuclear cells are diminished. There is an increase in the eosinophile cells some hours after the attack.

12. The leucocytosis is not so pronounced in *status epilepticus;* it diminishes with each seizure.

Respecting treatment the author remarks: "The effect of drugs on the alkalinity is transient, and it is impossible to elevate and maintain the alkalinity within physiological limits for any appreciable length of time. The bromides elevate the alkalinity even to the normal of the control cases for a certain time, but on continued administration, and even when the dose is increased, the alkalinity fails. The best results were obtained from strontii bromid, sodi bicarb, aa: gr. 15 *ter in die;* for some time the alkalinity was maintained at a high value, but only to fall again. Suprarenal extract has apparently little effect on the alkalinity. The effect on the mental state was good, and all the patients subjected to the treatment recovered from their mental confusion much sooner."

One case escaped the headache usually following the fits.

"In all the cases the number and frequency of the fits were much increased, and on this account the suprarenal treatment was stopped. These results are very different from those obtained by Dr. Hill,"[16] who reports improvement from the use of suprarenal therapy, both as regards the mental state and the frequency of the attacks.

SYMPTOMATOLOGY—CEREBRAL LOCALIZATION.

Phelps,[17] from a study of brain injury and disease, reinforces the view of Bianchi,[18] that the frontal lobes are the seat of the "psychic" functions proper, and particularly advocates that the left prefrontal region is especially concerned in mental processes.

X-RAY LOCALIZATION.

Charles K. Mills[19] reports a case of brain tumor localized by the *x*-ray, which confirmed the clinical diagnosis, being the second instance of this nature, the first being by Church.[20]

Gould[21] contributes a critical study of DeQuincey, Carlyle, Darwin, Huxley and Browning, as regards the cause of their chronic ill health. His conclusions, supported by arguments that are well worth consideration by the neurologist, are, that the opium habit of De Quincey, the ill-temper and dyspepsia of Carlyle, the neurasthenia of Darwin and the headaches of Huxley and Browning were all due to eyestrain, and could have been avoided by resort to modern methods for the detection and correction of errors of refraction.

LUMBAR PUNCTURE.

The usefulness of this procedure as a diagnostic aid has been extended to surgical diagnosis by Tuffier (vide Hughes[22]), who suggests that a blood-stained cerebrospinal fluid means vertebral fracture.

Monod[22] has found leucocytosis of the cerebrospinal fluid in locomotor ataxia and in general paresis, but "nothing significant" in alcoholism hysteria, hemiplegia or neuritis.

REFLEXES, ETC.

Babinski has enriched our list of clinically available signs by the addition of five within about as many years. Some of these are so little known in America, generally speaking, that brief reference to them here may not be amiss.

1. The "Babinski sign"[23] proper, or the "toe sign," is a reflex extension of the great toe in response to mild plantar irritation. This sign continues to hold its own as a most reliable indicator of organic disease of the "pyramidal" tract. The normal plantar reflex is a flexor movement of all the toes.

2. The achilles tendon reflex is a plantar flexion of the foot at the ankle joint, following a tap on the tendo-achilles. The patient, during this procedure, kneels on a chair or lounge with the feet hanging over its edge. The response (plantar flexion of ankle) is weakened or absent in true sciatic neuritis and in tabes. It may be absent early in tabes where the knee-jerks are not yet lost. (Bramwell, *Brain,* 1901, 554.)

3. The sign of "combined flexion of the thigh and trunk."[24] To investigate this reflex the patient is placed on his back on a horizontal surface with arms folded across his chest. He is then asked to assume the sitting posture without using his hands. In a hemiplegia of organic origin this effort is accompanied by a raising of the paralyzed limb, which is flexed at the thigh but extended at the knee. In a functional (or so-called hysterical) hemiplegia the paralyzed limb remains flaccid and parallel with the sound one.

4. The "platysma sign"[24] of Babinski is obtained by asking the patient to forcibly open the mouth against the resistance of the investigator's hand placed beneath the chin, or by asking him to flex the head on the neck while the operator applies resistance to the forehead. In either case the platysma contraction is absent or lessened on the paralyzed side in organic paralysis, while there is no difference in the two platysma contractions in a functional hemiplegia.

5. The sign of "exaggerated flexion of the forearm."[24] This is due to hypotonicity of the muscles by reason of which a greater degree of flexion is permitted on the paralyzed side in recent organic paralysis. In functional paralysis the hypotonicity is absent and the degree of flexion similar on both sides. Babinski remarks of this sign: "Since the phenomenon may occur to a slight extent in health, it is of value when it is very decided."

THE SUPRA-ORBITAL REFLEX.

This reflex, as described by McCarthy,[25] is obtained by tapping, with the finger or a light hammer, over the trunk of the supra-orbital nerve on the forehead. The normal response is a contraction of the lower eyelid. The presence of this response is evidence of integrity of the fifth and seventh cranial nerves. The reflex is present in central lesions involving motion or sensation of the face; absent in peripheral lesions of the fifth and facial nerves. It is important that the observer stand behind the patient in testing for this reflex, so as to avoid the involuntary winking due to visual-motor reaction.

THE LIP REFLEX OR "MOUTH PHENOMENON" OF NEW-BORN CHILDREN.

While referred to briefly by Loos, 1896, and Escherich, 1898, Thomson[26] has given us a fuller and well illustrated account of this reflex, which has received little attention heretofore. It would appear to be one of the most fundamental organic reflexes which is essential to the very existence of the species, consisting as it does of a protrusion of the lips, and in some instances of sucking movements, brought out by tapping the upper or lower lip near the angle of the mouth. It occurs in all healthy newborn infants when they are asleep, according to Thomson. It seems to be exaggerated in infants who are taking chloral or who are having or about to have convulsions.

OPPENHEIM'S REFLEX.

If the inner side of the leg be stroked firmly from above downwards with the handle of a percussion hammer (or other blunt firm instrument) along the posterior border of the tibia or a little posterior to it, commencing about a hand's breadth below the knee and going downwards nearly to the ankle, the result in healthy individuals and in cases of functional nervous disease is either negative or it produces a plantar flexion of the toes.

In lesions of the pyramidal tract there is an extension of the toes and abduction or adduction of the ankle.

Oppenhein[27] is of the opinion that this reflex is not identical with Babinski's "toe sign," inasmuch as it is often present in cases of spastic paresis where Babinski's reflex is doubtful; moreover, it does not occur in the small proportion of healthy persons who exhibit the Babinski reflex; finally, the involvement of the tibialis anticus and occasionally of the peroneus is another point of difference from the phenomenon of Babinski.

ANKLE CLONUS.

Wier Mitchell[28] calls attention to the fact that the motor element of ankle clonus is manifested through the soleus muscle alone, the gastrocnemius taking no part on account of its relaxed state due to its femoral attachment.

THERAPY—HYSTERIA AND NEURASTHENIA—REST TREATMENT.

Dejerine[29] reports two hundred severe cases of this class treated by the Wier Mitchell plan of isolation, milk diet and rest, but without massage. He had only two failures. The treatment is also emphatically indorsed by the reviewer (Alexander Bruce).

We have heard so much of the "rest" treatment of neurasthenia since its introduction to the profession by Dr. S. Wier Mitchell, some years ago, that it is a trifle refreshing, to say the least, to find the pendulum swinging to its antithesis, the "work" cure.

A group of contributors on the subject are noted: Pearce (massage), *Internat. Med. Jour.*, 1902-03; Sinkler, Hydrotherapy, *Milwaukee Med Jour.*, 1901; Pearce, F. S., *Alienist and Neur.*, 1902, p. 259; Schwab, S. I., *Interstate Med. Jour.*, 1902, 248.

A pertinent query in this connection would appear to be: Have we not been a little too liberal in the application of the term "neurasthenia" as we were with "hysteria" until within a few years?

It is not possible that we apply the term neurasthenia—which should be literally translated, simple dynamic weakness due to lowered vitality—to a large group of affections characterized by "irregularity in function," or "lack of balance" in dynamogenesis.

In such cases a transfer of function is the logical method, and here the "work cure" finds its place. True exhaustion, it appears to the writer, must still call for rest.

RAYNAUD'S DISEASE.

Cushing[30] advocates "treatment by the tourniquet" to counteract the vaso-motor spasm of Raynaud's disease. The case reported (in a woman of 35) was a severe one, with decided arterial spasm and great pain, accompanied by a local asphyxia of all the digits, with almost daily exacerbations. Superficial gangrene of one or more of the toes or fingers occurred on several occasions.

"On Nov. 10, 1900, during an exacerbation of pain and asphyxia chiefly affecting the left upper extremity, the flat rubber bandage was first employed as a tourniquet about the upper arm. Its application caused considerable local discomfort and pain referred to the side of the thorax (inter costohumeral?)

"On its removal, after one or two minutes' application, a bright flush of the extremity followed, with increase of surface temperature and a much more readily palpable radial artery. The vaso-motor relaxation lasted only a short time, but the patient expressed a sensation of considerable relief. From this time seems to date the beginning of her improvement.

"The tourniquet was applied daily to one or another member according as the symptoms indicated.

"The application was finally extended to periods of five minutes or longer.

"The relief to the burning pain was so pronounced that after the first few trials the patient was not only very willing to submit to the temporary discomfort of constriction, but would call for it."

Serum therapy continues to hold out hopes to the neurologist. Its use in pellagra by Ceni[7] has been already alluded to.

Bruce,[31] after a trial of serum treatment in paresis, concludes as follows:

1. "General paralysis is a disease directly due to poisoning by the toxins of bacteria, the point of attack of which is through the gastric and intestinal mucous membrane.
2. "The poisoning is probably a mixed poisoning, but the bacillus coli is apparently one of the noxious organisms.
3. "The result of treatment with serum, taken from a case of general paralysis in a condition of remission and injected subcutaneously into an early progressive case, points strongly to the fact that some form of serum therapy is the proper treatment for this as yet incurable disease." He now proposes to use serum from a horse immunized to the bacillus coli.

Dormiol, a hypnotic and sedative, has received attention from A. McGugan,[32] who considers it "equally effective" as chloral and pleasanter though more expensive. Other writers speak favorably of the remedy (see Amer. Year Book M. & S., 1903, 526). The dose is stated at thirty to sixty minims of a 50 per cent. solution.

THE NEUROLOGIC PROSPECT.

The two great problems in intimate relation to biologic progress, "the struggle for existence" and "the survival of the fittest," give us little trouble in a practical sense, since they are solved for us in the vast laboratory of Nature. From the enormous mass of material there worked over, however, there must result, as in most laboratories, a considerable proportion of "by-products," to borrow a chemical term—biologically speaking—of organisms below the standard; again others that are perhaps above it.

In other words, the more or less "unfit" are produced along with the "fittest." This gives rise to a third problem, which we may term "the utilization of the unfit."

To the various attempts of civilization to solve this problem we owe the existence of medicine, religion, law, ethics and art in general. There arises from its attempted solution such important and perplexing subproblems as:

1. The management of the mentally afflicted and of the physically helpless from various causes.
2. Of the criminal and dangerous classes generally.
3. Of the inebriate and moral invalid.
4. The question of the legal responsibility of various defectives.

Most questions of therapy in general.

In short, the extensive series of problems presented by the necessity for intelligent care of the defective, the delinquent and the depraved. It would be a narrow view from the standpoint of civilization, which would seek only the extermination of these classes, for it is a self-evident truth to the thoughtful, that they are necessary by-products of the laboratory in which Nature works out her most important ends. It remains for us, therefore, to utilize and improve or render them harmless.

The first of these subproblems, the management and treatment of the mentally afflicted and otherwise helpless, so as to obtain the best practical results, is yet in process of solution. Much has been done, but more remains.

A growing tendency to combine the heretofore widely separated subjects of neuropathy and psychiatry is evident from a glance at the world's literature. It is being recognized that their separation has been too radical. By the reception of the acute insane into the general hospitals the best interests of these patients, from a therapeutic and economic standpoint, is often conserved, and at the same time the teaching of psychiatric medicine to the general practitioner is made more effective. It is probable that we have gone too far in the separation of these closely-related subjects and that the complete general hospital of the future must provide for both classes of patients.

In the words of Maudsley: "Mental disorders are neither more nor less than nervous diseases in which the mental symptoms predominate, and their entire separation from other nervous diseases has been a sad hindrance to progress."

Sibbald,[33] in an able article on this subject, says: Wards for mental diseases do not require to be distinguished from other medical wards, and residence in sick wards does not entail the industrial and social injury that as a matter of fact follows residence in an asylum. Such wards have also the advantage over an asylum that a patient who goes there is saved from the mental shock which is often felt on entering an institution largely devoted to the care of the incurably insane. The writer can emphatically indorse this view of the subject from his experience in the wards of the Cincinnati Hospital, where a limited number of acute insane are treated.

The establishment of special or "psychopathic hospitals" for the separate treatment of the acutely insane, is along the same general line of progress and has been vigorously advocated of late years. I need only refer to the able address of my predecessor (vide Dewey[35]) for the details.

Peterson[36] and Brower[37] also contribute important articles on this subject. In the establishment of separate institutions for the epileptic the states of New York, Ohio, Pennsylvania, New Jersey and Massachusetts have already taken an advanced stand, and their example is likely to be followed elsewhere

THE HOSPITAL FOR CHRONIC DISEASE.

In our anxiety to provide proper hospital accommodations for the acutely ill there is some danger, according to Dr. E. W Taylor,[31] that we may overlook the claims of the chronic invalid. At present no provision is made for such except as paupers, in institutions variously characterized as infirmary, poor-house, alms-house, etc.

Dr. Taylor's contention that the interests of these patients and of the public in general would be better subserved by removal of the stigma of pauperism so far as possible is well taken.

A movement toward the solution of the second subproblem on our list has been inaugurated by the establishment of separate hospitals for the criminal insane in New York state, and the subject is now being agitated in Ohio[38] and elsewhere.

As regards the third problem, the care and treatment of the inebriate, it has been solved only so far as the well-to-do are concerned by private institutions, many of great merit and doing excellent work. The work should be extended so as to be available to those of the most limited resources.

In attempting the solution of the problem of the utilization of the unfit the physician has to deal with many who have been launched on the sea of life to make their "struggle for existence" with insufficient vital capital; with others who receive a fair start in this respect, but whose working capital has been impaired by the various stresses of circumstances, which we call "disease" and "accident"; and finally, with the very large number whose dynamic potentiality is sufficient for ordinary needs, if properly directed and conserved, but which fails to meet extraordinary demands or improper use. It is evident that "the strenuous life" is not for either of these classes.

The prophylactic and therapeutic efforts of the physician, therefore, must be largely addressed to the maintenance of nutrition, the regulation of function and the conservation of energy.

TEACHING OF PSYCHOLOGY AND PSYCHIATRY.

As an important adjunct to the better management of the above problems we need chairs of psychology and psycho-pathology in our medical colleges generally. (vide Persching[39]). Many have not even full chairs of neurologic medicine proper. It is largely due to this omission, and the consequent indifference of practitioners to psychiatry as well as psychotherapy, that the various isms, pathies and "cults" flourish as they do.

To successfully solve this problem we must do better than they, i. e., we must add to a sound therapy based on solid anatomic, physiologic and pathologic foundations, the same subtle, but none the less effective, psychotherapy which is the sole weapon of the pretender.

TO SUMMARIZE THE OUTLOOK:

We may look for important aids to neurologic progress, to serum and other antitoxic therapy; to cytodiagnosis and hematologic procedures generally; to organic and electro-chemistry; to prophylactic hygiene and dietetics; to a wise adjustment of function to structure; to special institutional measures and to better facilities for teaching neurology in general, including psychology, psychiatry and psycho-therapy.

The future of neurologic medicine as worked out along these lines will be of vast importance to the welfare of humanity.

"All things come to him who waits." *he who would utilize them must act.*

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THE DENTAL NURSE.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON STOMATOLOGY AT THE FIFTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT NEW ORLEANS, MAY 5-8, 1903.

M L RHEIN, M D, D D S
NEW YORK CITY.

In officially opening the meeting of the Section on Stomatology, I desire to tender to the members my high appreciation of the honor conferred in asking me to preside over your deliberations. It has been the aim of our Section to encourage the membership of men who are deeply interested in the scientific advancement of this specialty of medicine. On this account our numerical strength has not been great, and I trust that the members will be prompt in attendance at the opening of all the meetings, so that the magnificent program prepared for us by our worthy secretary will receive the attention and discussion which it merits.

Our propaganda in regard to a better education of the dentist in the principles of general medicine, as well as a better knowledge of dental principles in medical education, is making slow but sure headway. The cause has the hallmark of truth emblazoned on its banners, and is bound to prevail, however prolonged the struggle may be.

It is unnecessary for me to take up your time with a summary of the scientific work of the year. It speaks for itself in our professional literature, with which you are familiar. Our daily occupation as stomatologists includes the treatment of diseases of the oral cavity, primarily with a view to the preservation in a state of health of the teeth, on account of the great value they bear to the health of the general body. The art and handicraft of dentistry has taught us how to cope with dental caries successfully, so that no person in the civilized world at the present day need lose a single tooth from this cause alone.

Many people, however willing they may be to employ our services, are constantly losing teeth in consequence of various pathologic disturbances of the peridental tissues. The symposiums held in past years by this Section on interstitial gingivitis, pyorrhea alveolaris, etc., indicate how well we recognize the increasing number of teeth lost by this means. When this lack of inherent vitality of the tooth's periosteum has reached a certain stage, where not only seven-eighths of the root surfaces are covered by nodular secretions, but retrograde metamorphosis, in its peculiar way, is working towards sepsis and the destruction of cell tissue, we realize that such affected teeth are beyond human intervention. We also know that these very teeth, doomed to be lost as they are when too little vital connection is left, could have been preserved indefinitely if proper hygienic care and treatment had been instituted at the right time and kept up in a systematic way at regular intervals.

Preventive medicine, with its accompanying benefits, has been well understood since the time that Jenner proclaimed the virtues of vaccination. Since then prophylaxis has invaded the domain of nearly every disease and its science and practice is daily increasing and its field of usefulness becoming better known.

Its value in the province of stomatology is well known to the poorest dentist in the land. The cleansing and polishing of every portion of exposed tooth surface, at regular intervals, in such a way as to preserve the tone and health of the contiguous capillary circulation, will indefinitely preserve the life and stability of the human teeth. With a full knowledge of the inestimable value resulting from such systematic treatment, it is painful to admit that, as a rule, the general public get absolutely no benefit from the knowledge of the profession on this subject.

Like many other virtues, prophylactic treatment of the teeth is well understood by all dentists and practiced by only a few stomatologists. It is scarcely necessary for me to attempt to draw a pen picture of what the dentist does under the pretense of cleaning teeth, when requested to perform this service, or to speak of the wilful neglect thereof by the majority, when no especial demand is made by the patient. You have all examined the mouths of such patients, who inform you that for years their mouths have had the constant care of Dr. X., and he has cleaned their teeth every year. You have found secretions of years deposited on the roots. The more posterior and inaccessible the teeth the greater the extent of deposits. You are not surprised at finding such teeth becoming loose, with a surrounding pericementum more or less inflamed, and corresponding loss of soft tissue from superficial necrosis.

They come to us in all stages of tissue loss, from those easily cured to those irretrievably lost. You can not fail to recognize the picture, and neither can you fail to place the responsibility for this wholesale destruction of human teeth on the dentist who has failed to apply the principles of preventive medicine.

Are we to assume, from a study of this sad picture, that our calling is made up of men lacking in character and principle? Most emphatically no; in no specialty will be found men with higher attributes of character, in every sense of the word, than in this of ours.

THE DENTIST'S ASSISTANT.

There are very good reasons why this most important duty to our patients is seriously neglected. The necessity for performing the operations immediately necessary for the repair of existing lesions in tooth structure and adjacent tissue is of paramount importance. They are more than sufficient to take up all the time of the man with an average practice. The difficulty of receiving commensurate pay for the hours of time required in faithfully carrying out the treatment by prophylaxis, brings up the question of expediency. It is true that Dr. Smith of Philadelphia claims to personally give his patients this treatment at regular intervals. If an effort were made to follow out this method in an average practice, there would be time left for nothing else. It certainly is the consensus of professional opinion that the busy practitioner can not give up his valuable time for this tedious, monotonous and irksome labor, however important it may be for the salvation of the human teeth. A small number of us have tried to solve this important problem by employing an assistant practitioner to attend to this department. In the judgment of your chairman, who has tried this method for twelve years, it has failed to satisfactorily solve the problem.

The employment, in a private office, of a graduate to make a specialty of this work is very likely the best remedy we have had at our disposal up to the present time. The greatest objection to the plan is the inability to retain a graduate possessing ordinary ambition and talent a very great length of time in this position. It is impossible to obtain satisfactory results in this treatment if it is necessary every year or two to place a new assistant in this department. The patients object to these changes, and can not fail to contrast the work of the new assistant, who has to be freshly taught the character of the work desired, with the final work of the last assistant, which has become well-nigh faultless from a couple of years of constant practice. In discussing this subject with prominent men, it has been generally conceded that far better results could be obtained if suitable female assistants, not graduates, were specially trained and employed for this work.

In some of the states the examining boards have threatened prosecution for infraction of the dental law if such a course be pursued; consequently, it has not been adopted, much to the loss of the general public.

This brings up the question whether the cleansing and polishing of the teeth, massaging the gums and the application of remedial agents by non-graduate assistants, under specific prescriptions and directions of the attending stomatologists, are infractions of the law.

It might as well be said that the administration of drugs hypodermatically, the introduction of sounds and catheters, lavage and enemata, the dressing of wounds and numerous other services performed under medical direction by trained nurses are all infractions of the medical law. Take away the trained nurses from the physician and surgeon and it would be apparent at a glance how it would interfere with the number of his cases, to say nothing of the inferiority of the resulting attention which is such an important adjunct whenever the nurse is in attendance.

THE DENTAL NURSE.

If this correctly describes existing conditions, it follows, as a natural conclusion, that the problem of how to systematically carry out the prescriptions of dental prophylaxis would be easily solved by the introduction of the trained dental nurse.

In the State of New York, during the present session of the legislature, a law is being passed, placing the trained nurse under the jurisdiction of the State Board of Regents, which necessitates that they should possess the proper qualifications in education and practice. In view of the high esteem held for the work of the trained nurse, it appears remarkable that the sphere of her usefulness has not long since been extended to our own specialty.

It would be an easy matter to add to the training schools for nurses a department of dental nurses. Applicants for admission to such a course should be required to pass a satisfactory preliminary examination. Outside of the general didactic instruction which they would receive, they should obtain additional instruction in regard to the oral cavity, etc., from a stomatologic member of the school's faculty. They would also receive their manual training under the same supervision, and in the hospital material they would find ample opportunity for perfecting their working technic.

It is difficult to estimate in advance how much benefit would accrue to a large percentage of hospital cases if their mouths could be properly cleansed and rendered sterile.

Would it be claiming too much to say that there are serious conditions where such treatment properly administered might prove the turning point toward recovery or, in organic diseases, toward a material improvement in the general condition? Perhaps their greatest sphere of usefulness would be to place the mouths of patients in a sterile condition preliminary to undergoing surgical operations. When we consider all the devices used in the modern operating room, all devoted to obtaining ideal aseptic conditions; when we consider the patient anesthetized in an atmosphere barren of pus germs, with the single exception that too frequently the patient's mouth is redolent with putrescent filth, washed with secretions of pus; when we consider such conditions, with a celebrated surgeon about to enter into the digestive tract, can we longer question the value of the preliminary treatment by the dental nurse in such a case? Then there is the infirmary practice connected with all the large hospitals. Here is a field for the doing of the greatest good to this vast class of unfortunates. The cleansing of the mouths of properly selected patients in the dispensaries, combined with the proper education for preserving oral hygienic conditions, would be of greater value in the uplifting of the masses than any other means at present employed.

Having graduated from the training school, it would be in keeping with our other laws to compel the nurses to pass a state board examination. The passing successfully of such an examination would then entitle them to be registered as trained dental nurses. Being so registered, they would be able to practice their profession in private life. By that is not meant the fact that they would be licensed to go around indiscriminately, cleansing the mouths of the people.

Their license to practice dental nursing should mean that they are permitted to cleanse, polish and medicate the dental territory only under the prescription of the patient's attending stomatologist.

As chairman of your Section, I ask your approval for this means of placing within reach of the human race, the boon of prophylaxis in stomatology. There are three good reasons why it should receive your endorsement: First, it will tend materially toward the public good. Second, it will open to womankind a new vocation second to none in desirability. Third, it will materially aid the stomatologist in the quality of his results.

38 East 61st Street.

DISCUSSION.

Dr M. H. Fletcher, Cincinnati—I fully agree with the ideas advanced, and it seems to me there should be channels through which we could bring the matter prominently before the public, but we all know how long it takes the public to receive a new fact. Darwin's theories have only begun to be accepted. I believe if it were possible in some way to advertise the simplicity of this plan the matter would advance in general favor very rapidly All dentists know that such treatment is most desirable To begin at home, those who teach should impress it more fully on their students. We should teach all our patients that the simple fact of cleanliness prevents disease as much or more than anything else. To impress this fact on those with whom we are in daily contact, I think, should be our conscientious duty It would seem becoming in us as a company of progressive men to give our endeavors to the accomplishment of some plan whereby the suggestions in the address can be carried out

Dr Geo. J. Friedrichs, New Orleans—I do not take much stock in the continual teaching and preaching of cleanliness as a prophylactic: the mere knowledge that cleanliness is a prophylactic does not always result in benefiting those who most faithfully carry out the teaching. This rule applies to mankind in general A physician is certainly well posted in regard to the effects and consequences of the abuse of morphin, alcohol etc, yet in spite of his knowledge becomes their slave

Dr M. L Rhein, New York—In setting forth this proposition it has been my object not to enter into any question of etiology or methods of treatment, or anything of that kind, but to consider simply the advisability of adding to the dental laws in the various states a clause, not necessarily permitting the employment of dental nurses, but defining their limitations making it apparent that they are legally entitled to be of use. I am certain that as a physician if I desired to employ a nurse for this purpose I have the same right to that use as I have in any other capacity as a physician, and I am sure I could carry my point legally, but it is my desire to have their sphere well defined so that there would be no objection to their use by the general dentist I do not care to enter into the question of how difficult it is to bring a new plan before the public, but in my own mind I am certain that if my plan meets with general approval the next step will be easily accomplished, that is, the addition of a training school for dental nurses to the regular training school for nurses I trust that the gentlemen, in order to facilitate the other business, will give the Section the benefit of their thought on simply this particular point.

Dr George F. Eames, Boston—I have in my practice carried out many of the principles which Dr. Rhein has enunciated here, and have trained assistants to supplement me, rather than to take entire charge of what we may call prophylaxis When I begin a prophylactic treatment of the mouth my assistant usually sees what I do. I take opportunity then to explain what is to be finished or I direct such an assistant to do such and such things When a graduate receives his diploma from a dental college or from any institution, it grants him certain privileges, but it is understood that with these privileges within the law there are also certain restrictions. It is so with the appointment of graduate nurses or dental nurses. They do have the privilege of doing certain things within the mouth under the direction of the stomatologist, but there are restrictions to this as well as to other privileges. It seems to me we can not but endorse the plan that has been suggested by our chairman.

Dr. Thomas L Gilmer, Chicago—I thoroughly agree that it is necessary to have a better way of accomplishing the work spoken of than by the methods now prevailing. How we can bring this about I do not know. It would be better, it seems to me, to have regularly educated specialists for the work. The treatment of diseases of the mouth offers a good field for specialized workers. It does not seem to me that we could safely trust the treatment, for instance, of the so-called pyorrhea alveolaris, except the merest first cleaning of the teeth or some subsequent medication, to any one not thoroughly skilled in the work. I consider the treatment of this disease one of the most difficult things we have to perform, that is, the thorough removal of the serum deposits and the surgical treatment of the alveolus. As to the training of nurses in the hospital for the care of the mouths of their patients, I am in accord; and in my connection with hospital work and the teaching of nurses I give positive and detailed instruction to the nurses in the care of the mouth, and especially in the preparation of the mouth previous to surgical operations. We should continue the education of the people by personal advice in the care of the mouth and teeth. I believe I save more teeth and do far more good in the prevention of disease of the mouth by constant insistence and admonition on the care of the mouth by the patient himself than by all other means.

Dr. George J. Friedrichs, New Orleans—My remarks were not to find fault, but to commend, for "cleanliness is next to Godliness" Since cleanliness is helpful, but is not an absolute prophylactic of tooth structure, we must also look on the other side.

Mr T. E. Constant, Scarborough, England—None of us have any doubt at all that the public would be greatly benefited by such a scheme. Our laws in England are such that the education of such a body of semitrained people might act injuriously. Whether this would be so in this country I am not in a position to say, but that is the aspect of the question that we would have to consider. On the broad question as to whether the suggestion is a good one for the public generally I think there could be but one answer, that which has been given by the other speakers.

Dr. W. E. Walker, New Orleans— I do not see any harm that could come from the plan and I can see infinite good to come from it. When in general practice a very large portion of my time was spent in doing the very work that the paper suggests, having great assistance in the work by lady helpers. While I would certainly agree with Dr. Gilmer that the treatment of Riggs' disease from the surgical standpoint would be rather unwisely placed in the hands of such semitrained assistants, at the same time they could be of great assistance if used somewhat as Dr. Eames says, to supplement the work of the dentist; and the paper does not carry with it anything more than a proposition to supplement with the addition of legalizing their practice. As the Doctor said, he has a right to employ trained nurses to help in this work, whether they come from a training school or have been trained individually. But, the idea seems to be to make it beyond the possibility of criticism should they be employed by a dentist who is not a physician, that he may freely employ these trained assistants in his office and not run any risk of criticism or legal complication. It would certainly seem to me much better than, as the Doctor says, employing undergraduates that you can not hope to keep with you more than a year. I certainly can not see any objection to it, and I hope the Section will endorse the ideas.

Dr. H. E. Belden, New Orleans—I think we should have dental assistants to carry out our wishes in cleaning the teeth. The cleansing is an irksome task and demands a great deal of time and attention. The lines for a livelihood are closely drawn and we have to devote ourselves to the more scientific and lucrative tasks in our profession, and if we can put off those duties which can be performed by trained assistants I think it becomes us to do so. We help our patients by giving them more treatment (by our trained assistants carried out under our supervision) at the same expense to them and greater profit to ourselves, as we can give more attention to those things requiring greater skill.

Dr. C. V. Vignes, New Orleans—I think the idea of having such trained assistants is a very good one. From a legal standpoint, I don't know what condition exists in England, but I know that here anybody can practice almost what he wants. It is suggested that these special trained nurses be women because the young man or graduate at the end of a few months would go into general practice. I believe that the trained nurse would do about the same thing. She would go into general housekeeping. I don't know how it obtains in other parts of the country, but down here trained nurses are pretty liable to get married. The vocation appears to be a stepping stone to matrimony. I believe the field is a large one for young men, and that it would assist a great many to earn an honest living and keep them in the straight path; that is, they would practice in an ethical manner if they had the right start. I think it is an opening, not so much for the trained nurse as for the benefit of the young dentist who has a very hard road to travel.

Dr. Eugene S. Talbot, Chicago—I have no fear as to the future education of the dentist. The experimental stage is passed. Dental education commenced to shape itself when universities established dental departments. Although for fifteen or twenty years after that time there seemed to be a chaotic condition, yet the past five years has worked a wonderful change in the department of dentistry. The adoption of a four years' course is the culmination of the educational problem from a dental standpoint. The university will place this department of medical science on an equal footing with other specialties of medicine. The Section on Stomatology of this Association has played a prominent part in shaping dental education in America, and I for one am perfectly willing to let the universities work out the problem.

Credit should be given the late Dr. A. C. Hart, San Francisco, for suggesting the cleansing and polishing of the surfaces of the crowns of the teeth. Scientifically he did more in the study of this method than any individual. His death was a result of his enthusiasm along this line of investigation.

I agree with Dr. Rhein in relation to specially prepared women for the care and cleansing of the teeth, as first suggested by Dr. Wright, Cincinnati. That such women should be connected with hospitals to care for the mouths of the sick is certainly very important. How physicians can expect to treat their patients sucessfully with uncleanly mouths is a problem. It would seem to me that this paper should not only be published in The Journal of the American Medical Association, but later in all medical journals in this country and in Europe, and that reprints should be sent to all the hospitals. Every physician should read it. The dentist should insist on his patients coming to his office every three months and have the teeth cleansed. When the patients understand that by so doing they are saving dollars in fillings, etc., they will readily acquire this habit. If all dentists would do this the public would be educated soon to this method.

Dr. M. L. Rhein, New York—In my practice the plan of the return of the patient, as mentioned by Dr. Talbott, is pretty well in effect. Every one of my patients is sent for at regular intervals. The value of this method as a preventive of caries was not touched on. The removal of the racemose leptothrix, which is so baneful in its effects in early life, is of the utmost importance as pertaining to this subject.

In regard to Dr. Gilmer's remarks, it is far from my purpose to permit a trained dental nurse (if I may use the term) to perform what he and I, and I believe all dentists, consider one of the most serious and difficult surgical operations. That they should not be permitted to surgically clean alveolar sockets in peridental diseases, or do any of the ordinary forms of dental work is the main object I had in introducing this matter and in asking for your approval of the suggestion to legalize the position of a dental nurse so as to legally establish the limits of her sphere of usefulness. Personally I would prefer that these assistants be women, the reason for which I will not take the time to explain. In my opinion they might be permitted to remove deposits in normal mouths, but in distinctively pyorrheal and interstitial gingivitis their duty would come only after the surgical work had been completed by the surgeon. They would follow his direction in thoroughly polishing the tooth structures and in medicating the tissues. In conjunction with this comes up the point raised by Mr. Constant. His objection to its usefulness is based on a condition of legislation which does not exist in the United States. I understand that in England the passage of such a law might give improperly trained persons an insight in dental practice and thus enable them to take an improper opportunity to work their way before the public as dentists without being interfered with by the law. In the United States, in most of our states, at the present day, the laws are rigidly enforced. This is especially true in the eastern part of the United States, and here it would be impossible for infractions of the dental law to go unchallenged. I would also say, in reply to Dr. Gilmer, that it is a great pleasure to me to know that there is one hospital in the United States where the mouth is properly prepared preliminary to any surgical operation. I know of no such condition in the city of New York. In that respect we are rather behind the west. Outside of that one hospital I think the general surgeons in Chicago or of the northern cities do exactly what the general surgeons do in the east: when they open the peritoneum, when they have an operation for appendicitis, or a laparotomy, the condition of the patient's mouth is not considered. That has been my experience in the east, and I have seen some such conditions in the west. I do not for an instant suppose that any of us who do surgical work would permit any patient of ours to go on the operating table in such condition. I refer to those medical men who are absolutely devoid of the ordinary rudiments of knowledge as to the oral conditions and the septic influences that may proceed from the oral cavity.

Original Articles.

SUNSHINE AND FRESH AIR VS. THE FINSEN ULTRA-VIOLET RAYS AND THE ROENTGEN RAYS IN TUBERCULOSIS OF THE JOINTS AND BONES.*

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The increasing use of the Finsen light and of the x-rays in the treatment of cancerous lesions of the skin and deeper tissues, and especially their use in lupus and other tubercular skin affections, naturally arouses the question of the utility of these rays in the cure of tuberculosis of the joints and bones. The results thus far obtained are certainly sufficient as regards tubercular lupus to warrant the *continuance of our efforts in this direction*, but the opportunities for noting the effect on deeper tissues in tubercular joints have not yet been sufficient to warrant definite conclusions. A large number of cases will be required to decide the question of benefit, since from the nature of the disease speedy conclusions will be unjustifiable. The course pursued by the tubercular process in joints is always slow, and there are such great differences in the rapidity of progress that the surgeon is very likely to draw wrong conclusions from the results of any method of treatment instituted.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, De Forest Willard and J. E. Moore.

The inhibitory action of the actinic light ray and of the *x*-ray on the growth of tubercular bacilli in the laboratory is undoubtedly positive, and such experimentation is an essential part of our progress in accurate knowledge. Combined with these experiments, however, must be careful clinical observation and an accurate recording of facts as they present themselves. I am free to confess at present writing that no definite conclusions can be formulated; only that progress, though slow, is hopeful. At the present time we are erecting at the University Hospital a complete plant for the thorough testing of the therapeutic effect of these light rays, and also of the *x*-rays, and I trust that at the end of five years certain positive data will be secured.

Any method or form of treatment that will tend to retard or inhibit the growth of these bacilli is helpful in the long fight with tuberculosis, and the part of the surgeon must be twofold: First (and I purposely put this proposition first), the fortification of the individual for the conflict; second, the destruction of the enemy.

The secret of success in the battle with tuberculosis of the bones and joints rests overwhelmingly on the resistive power of the individual. While, therefore, the Finsen light and the *x*-ray may have their effect in retarding or inhibiting the growth of the bacilli in a local area, it should be remembered that even the total destruction of this small company means but the temporary crippling of the invading army, and that real safety lies entirely in the permanent upbuilding and strengthening of the resistive powers.

The tubercle bacilli are vegetable parasites subject to the fundamental laws of organic life. Their growth is favored by a lack of resistance of tissues and by a fertile soil. This lack of resistance may be due to traumatism of moderate, rather than of severe, degree, or to temporary constitutional causes, or it may be the result of an inherent and hereditary cell weakness. When special soil and special environment are provided, these bacilli will run a speedy and definite course. That their course can be retarded or totally inhibited is definitely proven both in laboratory and clinical experience. Their growth is facilitated by darkness, dampness, moderate hyperemia and all depressing physical and mental influences. They are resisted by light and air and food, and thorough oxygenation of the tissues, by environment, soil and phagocytic defense. The absence of any of these favorable conditions means growth; their presence, destruction of the foe.

The most powerful agents in our possession for the inhibition and destruction of these micro-organisms are sunlight and fresh air and abundant nourishment. The sun's rays are undoubtedly more helpful than any artificial rays, just as natural waters compounded by the chemistry of the Ruler of the universe differ very decidedly from the waters artificially compounded by the chemistry of man.

While experimentally the strongest sunlight in summer takes more than an hour to kill bacteria, yet the ultimate influence is undoubtedly more beneficial than artificial contrivances. The large proportion of hours of sunshine in Colorado undoubtedly has much to do with the reputation of that region for the cure of tuberculosis. The beneficial effect of the sun bath was well known to the ancient Greeks and Romans, and we have been too tardy in again bringing into service measures which they learned from practical experience, and which we in our blindness have overlooked. As surgeons, we can with benefit learn a lesson to-day from the washerwoman and the farmer.

In my own hospital wards I have always considered the sun porch as the most important of all the means of cure. Every tubercular joint case confined to bed, either with horizontal extension or with fixation or traction of joint, spends the entire day at all seasons lying directly in the sunshine, his eyes and head being protected by a green shade attached to the head of the bed. The effect on health, appetite and cell resistance is simply marvelous. When able to walk about, patients are encouraged to play in the sunshine, not in the shade. I have not infrequently sent out into the sunlight and fresh air apparently hopeless cases of joint disease with lardaceous organs, and have had them return with sinuses healed, waxy changes arrested and health restored. Of course, it is necessary that surrounding conditions, even in the country, shall be healthful, since many farm houses are unsanitary in the extreme.

In the treatment of tuberculosis of the joints not only are mechanical and operative measures necessary, but all the accessory conditions of health are essential: a superabundance of easily digested and nutritious food, and clothing adapted to the surrounding conditions, in addition to the sunshine and air. There are few individuals who have not observed the influence of darkness and poverty and vice on the general health, and yet few physicians realize the importance of securing the brighter and better conditions. The time is near at hand when sanatoria for the treatment of tuberculosis of the hard parts, as well as those of the soft tissues, will be established. Outdoor life in tents, either in the pine forests or in the hospital grounds, promises a simple practical application of the principles enumerated. Cheeks will grow more rosy, flesh will increase, energy will improve, *and resistive power will speedily be such as to control* and overcome the tubercle bacilli.

McKenzie and Galloway[1] have also adopted this most excellent principle of treating cases of tuberculosis of joints in the open air by having them live in tents, thus giving patients all the advantages of sunshine and fresh air that are now in vogue in the lung tuberculosis sanatoria. The appetite is greatly improved under such conditions; more food is taken, and it is better digested.

Dr. Flick's regulations at the White Haven sanatorium for consumptives are just as applicable to joint tuberculosis as to phthisis cases: patients to live in tents and to spend their life absolutely out of doors, air to circulate freely through the sleeping apartments, ample bed covering to be supplied. Each patient to take at least three quarts of milk and six eggs a day; more if possible. In addition, a good dinner in the middle of the day, and a light breakfast and supper. Dinner of roast beef, vegetables and dessert. The gain or loss in weight are the best indications for adaptation of treatment and food.

Poncet, of Lyons, and Perdu and Blanc[2] have also applied the method practically by exposing joints covered with iodoform gauze to the direct action of the sun for hours in the day. As the case recorded by them, however, had had a previous excision of the knee, the report only shows that the sun's rays acted helpfully in the cure.

Eve[3] applied the light and heat of ordinary electric light bulbs (96 candle power) to a number of cases of arthritis with benefit. Mobility increased and pain was almost entirely relieved. The limb was placed under a canopy made of blankets thrown over a cradle, and the heat raised to 250 F. The beneficial effects of the heat seem to have been increased by the bright light.

Kime[4] uses direct sunlight, concentrating it through an adjustable photographic ray filter, a plano-convex lens of 18 inches focal length and 6 inches in diameter. Behind it, ¾ of an inch distant, is placed a plain plate glass. Between the lens and the plate glass is a space for the blue copper alcoholic solution, which cools the sun's rays and absorbs all but the blue or actinic rays, which are rich in their chemical and germicidal powers. Although such a light focussed to a small point is hot, yet it can be regulated so as only to produce hyperemia, new vigor, new cell action and repair.

Heliotherapy or actino-therapy would probably be the best designation for this method of application of the concentrated sun's rays to the cure of disease; electro-phototherapy for the condensation and application of electrical rays to the same purpose.

Within my recollection, Butler in the 60's, successfully employed sunlight for the treatment of epithelioma of the skin, using for the purpose an ordinary biconvex lens.

Finsen at Copenhagen, Rikli, Koch, Strauss, Arloing and others, deserve great credit for their experimental and practical application of the bactericidal action of the sun's rays.

Finsen has shown by his experiments that the blue, actinic or chemical rays, which include the violet and ultra-violet rays, are the only ones that have an especial influence upon animal life and are bactericidal. The red, green and yellow heat rays have no effect upon the micro-organisms. It is the actinic rays which produce sunburn, not by burning the skin, but by slight irritation which produces the pigment deposit. Finsen also experimented with the effect of rays of the sun in smallpox cases, and found that if the patient was kept under red glass and red curtains, etc., that there was no scarring. The concentrated sun's rays have been proven by experiment to be capable of destroying bacilli in a few seconds, instead of hours, and it is also claimed that a concentrated electric light in which the ultra-violet rays are in abundance has a greater bactericidal power than even the sun's rays. These ultra-violet rays in the electric light are in shorter wave lengths, while in sunlight they are of longer wave lengths; the shorter ones have already been absorbed in the atmosphere.

The actinic rays penetrate much deeper into the tissues when the latter are rendered bloodless by pressure or by ice. The passing of the ultra-violet rays through ice renders them more destructive to the tubercle bacilli from the fact that the chilling of the skin by the ice renders it more anemic, and thus gives the rays a better opportunity to act upon the bacilli. Ice is transparent to the violet and ultra-violet, but is opaque to the red and ultra-red rays. Pigmented skins and cicatricial tissue interfere with the penetration of light rays, as does also great vascularity. The skin and intermediate parts should be protected when the x-rays are used, but do not need protection, save from the heat, from the Finsen light. In order to retain all the ultra-violet rays (which are the most efficacious) blue sulphate of copper was first used, as blue excludes the red rays, but now only ordinary cold running water is employed between the lenses to arrest the red rays and cool them. Finsen also used a lens of rock crystal in place of glass, in order to allow the ultra-violet rays to pass through more easily. The lamps used were from 25 to 75 amperes, since above that strength it was found difficult to cool the rays sufficiently by the use of water. Finsen's large lamps have 35,000 candle power.

In the lamps made in London by Marshall and Woods and Leslie Miller, an interrupted current is used of about 12 volts, and the sitting is prolonged from five to twenty minutes. With some of the new lamps an area of the size of a dollar can be treated at one exposure. In the sunlight baths, Finsen has his patients walk about naked. Finsen's electric bath consists of gigantic arc lights, 100 amperes, suspended six feet from the floor. Patients lie naked on couches. He uses the voltaic, instead of the incandescent, as the former contains more chemical rays. His theory is that the chemical light bath differs materially from the incandescent light baths.

If the x-ray can modify local tuberculosis (Muhsam, Fiorantine and others) the Finsen rays are much more likely to produce a beneficial effect.

The lamp now used in the Broca Hospital, Paris, is smaller than Finsen's and more easily handled. The carbon is made with a core of cast-iron, thereby emitting, it is claimed, three times greater amount of ultra-violet rays. The exposures only last twenty minutes, instead of seventy-five, and 30 amperes are used instead of 75 or 80. Anemia of the tissues by pressure is also not considered essential, and the application is made once in two days.

Kjeldsen's lamp is less expensive than Finsen's, and does not require specially trained nurses for its application. Lamps of 5 amperes are employed, and instead of carbon, iron electrodes are used, which are very rich in chemical, and very poor in heat, rays. It is claimed that a lamp of 5 amperes gives the same result in three minutes that is given in an hour by the use of 80 amperes with the old apparatus, the cost being about one-tenth, and the assistants required being few. It is also claimed that tubercular bacilli, gonococci and streptococci, and bacteria coli communis were inhibited by the light in five seconds, and that anthrax was killed in thirty seconds.[5]

Widmark, of Stockholm, used but a 1,200 candle power electric light, passing the rays through water to absorb the heat rays, then by carrying the rays through a plate of glass, he excluded the ultra-violet rays and reported that under the influence of all the rays except the ultra-violet, the skin was unaffected; under the influence of all except the heat rays, the characteristic inflammatory symptoms developed. It seems probable, therefore, that the ultra-violet rays produce the known effects of light upon the skin.[6]

Erythema solare may be avoided by care and by the not too rapid use of the rays.

If the current is too strong the skin swells and redness and blisters may appear, but sloughing does not occur. Pyrogallic ointment has been used in lupus to make the skin more penetrable to the rays, and may be also useful in joint disease.

The disadvantages of the Finsen method, which will undoubtedly be lessened when the practical mind of the American applies itself thoroughly to this subject are: *first*, the limited area of the body which can be exposed to the ray of a single lens; *second*, the length of time required, and *third*, the large staff of special nurses that must be engaged. An area of only one and a half centimeters can be treated in an hour.

The cost of the running of the Finsen light is a serious one. A recent estimate makes the expense of a four-light lamp for a year to be $3,000.

As regards the risks, the reaction caused by the ultra-violet rays is much less severe than that following the use of the x-rays; the heat rays being interrupted by a stream of cold water, there is, of course, less danger of burning of the tissues, and the tanning or sun-burning of the skin renders increasing strength possible.

King has advanced the theory that the parasite of malaria scarcely ever develops except in darkness, and that it may be the red color of the blood that favors its life, while the violet rays interfere with its evolution. His theory of the action of quinin in the cure of malaria is based upon the fluorescent properties of the drug, which act as a destroyer of the malarial parasite, and that esculin and fraesin give the blue rays. Iodin, which is not fluorescent, unites with the starchy substances in the system, forming an intense violet blue. Methyl blue, which has been introduced for chronic malaria, may also act in the blood by producing rays which are injurious to the growth of the malarial parasite. The painting of the skin with methyl blue is said to enhance the efficacy of the rays.

General Pleasanton's[7] "blue glass theory," which was lauded thirty years ago, undoubtedly had some merit. He built his sun rooms with every eighth pane of blue.

The theory advanced by Bean[8] seems reasonable that a restorative change may be effected in a pathologic cell by which instead of being destroyed, its character may be so altered that it becomes again a normal cell. Such a change may be occasioned by exposure to light, by alteration of temperature, or by some vito-chemical alteration or molecular vibration at present unknown to us. Each individual difference in rapidity of vibration of the light waves evidently has its special effect on cells. If such be the case it is not necessary that the rays should have positive bactericidal influence, but only that they possess an alterative effect.

The photo-chemical properties of sunlight and of the electric Finsen light require much further investigation, both as to their physical and their therapeutic properties.

The observation was made long ago that the course of tuberculosis differs in brunette and blonde children. Recent observations made upon calves used in the manufacture of animal vaccine, show that the pustules do not develop as well in animals with a dark hide, but that the light-skinned ones are preferable.

Light rays cause contraction in living protoplasm,[9] but Hammer does not believe in the direct action of light on the blood corpuscles. He supposes that certain nervous elements of the skin, in connection with the pigment cells, are put in motion by the ultra-violet rays, and that this motion leads secondarily to hyperemia, inflammation and pigmentation. His experiments on tadpoles, salamander eggs, earthworms, etc., endeavoring to explain the phenomena and to study the relationship between motility of cells and monochromatic light are interesting in showing that light provokes movements in the fetus, and that this faculty must be attributed to the violet rays. White light causes sensibly less action. It is the chemical ray undoubtedly which is the special agent in influencing cell action. Electric light baths and incandescent lamps contain very few chemical rays, not, in fact, as many as ordinary daylight. They can not, therefore, possess the influence of sunlight. These electric light baths probably affect the cells through their heat rays, while a chemical light bath acts differently.

The Roentgen or *x*-rays have been used by myself, by Murphy and a number of other surgeons in the hope of influencing the tubercular process in joints and bones. As remarked in the earlier portion of this paper, it is too soon to determine results, for the reasons there set forth.

The *x*-rays have been proven to have an inhibitory influence not only on the tubercle bacilli, but also on the cholera spirillum, the prodigiosus and the colon bacillus. In the laboratory, after twenty to thirty minutes' continued exposure to the rays, many of the bacteria are killed, and multiplication ceases in nearly all. Some of the micro-organisms, however, survive. Experiments on animals do not seem to warrant the conclusions that the same action can be expected when these pathologic cells are surrounded by living tissues. Animals inoculated and exposed to the *x*-ray have died sooner than similarly inoculated animals not thus exposed.[10]

Various theories have been advanced as to the method by which the *x*-ray energy is exerted on the cells; each theory has been succeeded by another as equally plausible, but all lack positive demonstration.[11]

The bactericidal power is apparently not due either to the heat, the fluorescent light, electricity or ozone.

In our present state of experimentation various therapeutic methods will be employed. One of these has been the alternation of the Finsen with the *x*-ray; Finsen one hour; *x*-ray, five to eight minutes. The Finsen light has less penetrating power than the *x*-ray, but the combination of the *x*-ray to destroy the germs and the Finsen to act as a curative agent seems to be most advisable. The hard *x*-ray tubes have apparently greater penetrating power than the soft. Tanning of the skin is best done by the slow process. The skin and intermediate parts should be protected when the *x*-rays are used, but do not need protection from the Finsen light, save by cooling.

The amount of irritation produced by the *x*-ray on a part depends on various conditions; the distance from the tube, the time of exposure, the hardness or softness of the tube, the cutaneous idiosyncrasy of the patient, the length of exposure and the personal equation of the experience of the operator. Undoubtedly, however, the nearer the tube and the longer the exposure, the greater will be the danger of burning.

The experiments with *x*-ray on cancerous growths, especially of the skin, and even of the deeper tissues, leads to hope that the life process of tubercular cells may be altered, and that destructive changes may be retarded, if not altogether inhibited.

The superficial effect of either the Finsen or the *x*-ray on lupus can not be taken as a guide to their effect on deeper tissues in the joints and bones, yet we may reasonably hope that if the former can be influenced, human ingenuity will in time discover a method for the alteration of deeper tissues. In this connection it is interesting to note the recent achievements of Goodspeed that the wave or ray emanations from the human body are sufficient to impress a photographic plate. Very remarkable also are the continuous forces emitted from that new metal, radium. With the advancement of science and of medical knowledge, tuberculosis must and will be conquered.

The application both of the *x*-ray and of the Finsen light is rapidly becoming wider in its scope, but they should be used not as a substitute for mechanical and operative measures, but to supplement them, and to improve or cure the inoperable cases.

CONCLUSIONS.

1. Sunlight, fresh air and good food, together with fixation and protection of the affected joint, are the most important agents in the contest with tubercular infection.

2. Direct exposure to the rays of the sun is essential, and all hospitals should be provided with solaria or sun porches and roof gardens.

finally separate them into bands and detached cells surrounded by a reticulum filled by white cells.

3. *Elastic Tissue.*—Weigert's resorcin stain shows considerable elastic tissue in fibers and granules, usually in the immediate neighborhood of a new vessel, but not in its walls.

4. *Hyaline Degeneration.*—As this degeneration is a regular part of the life history of an epithelioma, it is not surprising that it should form a large part of the picture in many of the sections. It is especially noticeable in both pearls and single cells about the middle of the series, being replaced by coagulation necrosis in the latest slides. In many of the later slides the hyaline bodies of Unna are plentiful, as well as many cell inclusions, which, stained by the Pianese IIIb, or by Plimmer's method, are indistinguishable from the so-called Plimmer and Russell bodies as figured by Gaylord. As these do not appear in the early sections, but only when karyokinesis has ceased and degeneration of various kinds are very marked, it is difficult to understand how these fuchsin bodies can have any etiologic relation to cancer. They are indistinguishable as to staining reactions from the other hyaline bodies noted above.

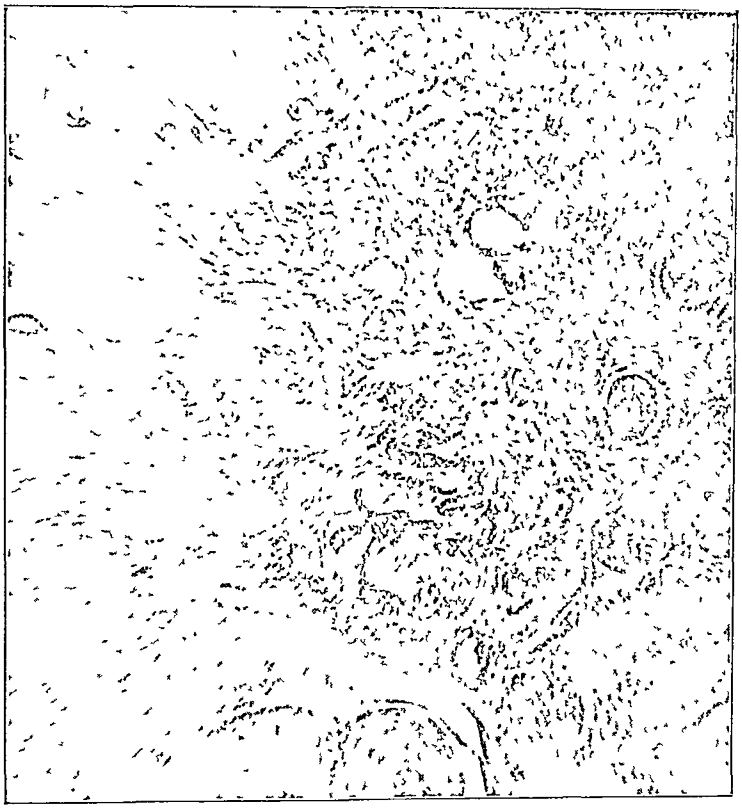

Fig. 5.—Elastic tissue. Weigert resorcin safranin.

5. *Necrotic Changes in Cells.*—In some of the early slides karyokinesis is well marked, but later it entirely disappears, except an occasional cell in blocks taken from near the skin border of the ulcer. Chromatolysis begins quite early and increases until in the last sections there is hardly an intact nucleus. At the same time there is fusion of the cell bodies and loss of all cell outlines. Hyaline degeneration of single cells is very common, as before stated, as are the fuchsin bodies.

6. *Final Result.*—The latest sections obtained before destruction and liquefaction show an interesting and remarkable picture. Nothing is left of the epithelial structure but some dimly staining masses of cells in coagulation necrosis, with the rest of the section composed of a fine reticulum taking the acid stain, having its spaces filled with polymorphonuclear leucocytes, fragmented nuclei and other detritus, while interspersed through the mass are small clumps of epithelium and single cells, which have no nucleus and have lost their outline, and are just ready to pass into coagulation necrosis. In areas where the final fluid detritus was confined the microscopic appearance was like a so-called laudable pus, and the microscope showed only polymorphonuclear leucocytes, broken-down epithelia and free fat.

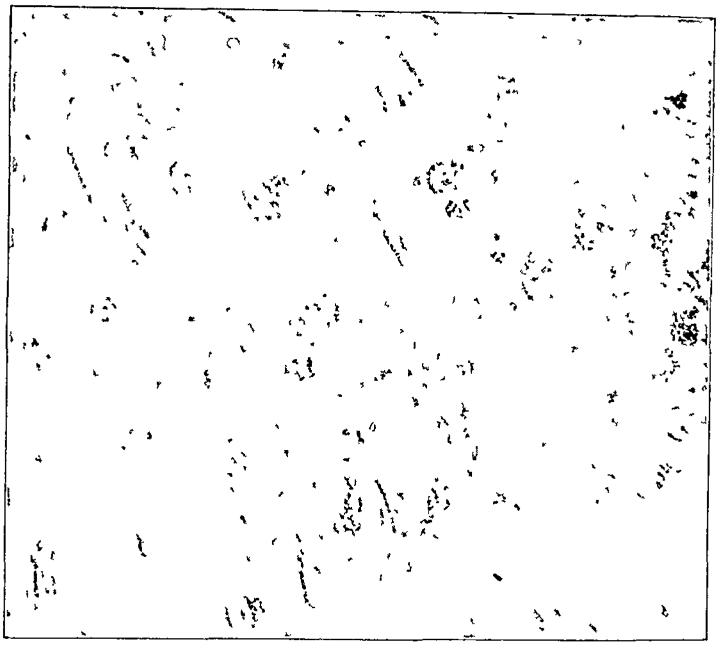

Fig. 6.—Shows hyaline cell inclusion similar to Plimmer bodies

The study of sections from other epitheliomata, after varying exposure, gave results corresponding to the above, although in small growths it was impossible to get more than one or two blocks. One case especially, an epithelioma of the ear, after four ten-minute exposures, gave a picture like the final one from Case 1, except that the leucocytic infiltration was almost entirely composed of plasma cells, instead of the polymorphonuclear form.

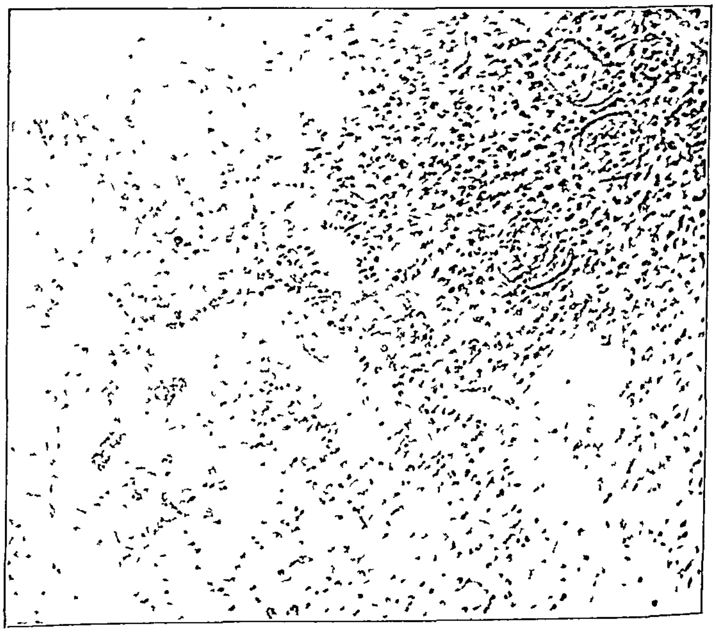

Fig. 7.—Shows general breaking down with infiltration of leucocytes into and between the epithelial cells, hyaline degeneration of the cells and at outer edge coagulation necrosis of whole mass

It will be noticed that there are several very striking differences between the results of the study noted above, and those obtained by Ellis in the two cases of epithelio-

Dr. Edward H Nichols, Boston—I agree with the beginning of Dr. Stewart's paper, but there are one or two things later on which I am compelled to differ with him In regard to those lesions which were selected for this *x* ray treatment as epidermoid cancer or epithelioma, which, after a greater or lesser number of treatments have disappeared the ulcers healed over, the capillary growth melted down and entirely disappeared and new skin formed, such cases are constantly being reported as cured I think we should consider all those statements of cures with the greatest suspicion It is true that for some reason or other the surface condition has apparently improved The fact that the new skin has formed over the area of the wound is far from proving a cure of that case of cancer I have had considerable opportunity during the last three years of observing the histologic changes following *x* ray work The cases referred to by Dr Christian I have had the opportunity of seeing The changes as we have seen them following the use of the *x* ray have shown no peculiar characteristics The changes in cases of epidermoid cancer treated by the *x* ray show as a rule, an increase and in many cases stimulation of the cells And I would defy anybody to recognize this change as a characteristic one You see exactly the same changes as you would see in cases of degenerative carcinoma and this has been deemed by some men to be due to the action of the *x* ray on certain portions of the epidermoid growth, but they are really indications of the growth of the cancer The *x* ray acts as an irritant and acts on those portions of the cancerous growth which are less resistant than the sound tissue I think it can be perfectly explained by saying that the *x* ray acts as a mild irritant, not producing burns, yet sufficient to cause increase in the epithelial cells at first and later disintegration One other thing that needs to be borne in mind is that the *x* ray can also produce epidermoid cancer At a meeting of the American Dermatological Association a year ago last August a case was reported of extensive epidermoid cancer of the hands of a man who had been using the *x* ray followed rapidly by metastasis There is at the present time an operator in Boston who has lost three fingers on one hand and two on the other due to extensive epidermoid following rapidly after very extensive *x* ray irritation he having had a distinct *x* ray burn In regard to the bodies that Dr Stewart mentioned, I have seen their work in their own laboratories, so perhaps I can express an opinion and I have seen the definite Plimmer bodies of Greenough and I do not think these objects seen by Dr Stewart were the Plimmer bodies I think every surgeon should bear in mind very carefully the fact that the *x* ray is liable to produce cancer In certain cases it may do good, and for that reason I think it is better to first remove the epidermoid cancer and then use the *x* ray and in certain cases it may be of advantage, but I think in all cases operative treatment should be the first procedure

Dr. John Ridlon Chicago—In regard to the treatment of tuberculosis of the joints by sunlight I do not think that we should assume too large a hope in this direction Sunlight or any other light alone does not cure tubercular joints, they must be treated by mechanical means, immobilized, or else no good can result from the exposure to the sunlight or any other light As to the effect of sunlight on tuberculosis of the joints, I am somewhat in doubt as to whether it is likely of itself to produce beneficial results All of us who practice in large cities and large towns can see great gain if a child is exposed to the sunlight On the other hand, in the case of tubercular joints in the children of farmers and people who live in the country, who are more exposed in the sunlight and fresh air, there is usually not so much improvement from further exposure to sunlight and open air It would seem then that from clinical observation it is the change of environment that has the effect rather than the sunlight and air without the local environment

I have had no personal experience with the *x* ray treatment of tuberculosis My office associates, Dr. A D Harmer and Dr. John L Porter, have done considerable experimental work with the *x* ray on tuberculosis of the joints and such expect to test them for five years I do not expect to obtain any results that will be of value in a shorter time

In reply to Dr. Ridlon, I would say that in my conclusions, I stated that sunlight and fresh air should be employed, "together with fixation of the joints" In another conclusion I said that this method should be employed, "not to supersede, but to supplement the mechanical and operative appliances" I took it for granted that no element would be neglected, and particularly the mechanical fixation, which is so important, in fact the most important element in inhibiting a destructive tubercular process

In regard to the criticism that many farmer's children who live in the open air have tuberculosis of the joints, I would say that I have not infrequently found farmers houses in far more unsanitary conditions than prevail in the city

Our patients are benefited in the city hospitals largely because we bring them out of the darkness, and give their good food, in addition to mechanical appliances

The point that I wished to emphasize was that, in addition to all our other methods, we should employ sunlight, the *x* ray and the Finsen ray, in fact everything that will help us in the desperate fight with joint tuberculosis

Dr J. Clark Stewart, Minneapolis—In answer to Dr Christian I would like the permission of the chair to ask him a question, and that is, whether the washing of sections stained by osmic acid in ether and thus discharging the black color does not prove the blackened substance to be fat The technical work was done for me by Prof Margaret Nickerson of the University of Minnesota, and I am confident that Dr Christian may accept all statements of fact as correct In regard to the fatty degeneration, as I stated in my paper, the slides were washed with ether, demonstrating the presence of large amounts of fatty degeneration, and as Unna states that fatty degeneration never occurs in epithelioma, this pronounced fatty degeneration was considered worthy of mention In regard to the vascularization being simply that of granulation tissue, I would say that the presence of the vessels long antedated the presence of anything which could be termed granulation tissue, and even of the leucocytes themselves Later, where at first red blood cells had appeared in the new vessels, these were crowded with leucocytes, and still later, the leucocytes infiltrated the extravascular tissue All the changes described in my paper were distinctly progressive during the treatment of the case I don t attach much importance to the polymorphonuclear form of leucocytes in these sections as in two other cases where the resulting changes were about the same, the leucocytes were entirely of the plasma cell type I was glad to hear Dr Nicholls' remarks about the nonoccurrence of Plimmer's bodies in epithelioma The bodies figured by me closely resemble those pictured by Gaylord in his article in the *American Journal of Medical Sciences* The study of these cases shows certain positive results which must be of more or less value in explaining the results attained by successful treatment

In regard to Dr Willard's paper I can add just one observation of interest I have treated one case of caries sicca of the shoulder joint with rather striking results These cases as you know, usually go on to ankylosis after about two years' disability while the case under consideration attained about the same result after two months' treatment with the *x* ray Apparently the cicatrization and contraction of the tubercular tissue about this joint was very greatly hastened by the effect of the *x* ray

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English the Universal Language—A Spanish physician taking a post graduate course at Vienna writes to the Madrid *Siglo Medico* that he had been informed that some of the lectures were delivered there in French and other languages but found that this was a mistake He says "The lectures are exclusively in German or in English, and the latter is the truly universal language and he who says the contrary, lies (" . *en ingles, que es hoy el idioma verdaderamente universal: y que dijera lo contrario miente*") He adds that the North American colony there is "tremendous," and "Yanquis" are to met everywhere very frequently as the assistants at operaons

VARIX OF THE INFERIOR MESENTERIC VEIN COMPLICATED BY CHRONIC ULCERATIVE COLITIS—OPERATIONS.*

J. E. SUMMERS, Jr., M.D.
OMAHA.

I am led to report the following case because the condition found is unusual, or has at least received scant attention at the hands of pathologists. For this reason I will give the history somewhat in detail.

History.—Mr. B., 34 years of age, was referred by Dr. I. Lukens of Tekamah, Neb. The following was elicited: When two years of age he began to suffer from prolapsus of the rectum and never received permanent relief of this condition until 27 years old. He was a rather puny boy and was not a robust man, although able to attend school and perfect his studies so as to become a competent school teacher. During all these years there had been a constant tendency toward rectal prolapse.

When 27 years old Mr. B. underwent an operation, some tumors were removed (probably hemorrhoids), three ligatures being employed. Following the operation the patient enjoyed fairly good health until the spring of 1901, when his general health became poor. In August, 1902, as the result of doing some unusual manual labor, the lifting of heavy joists, he was attacked with frequent desire to go to stool and the passing of considerable quantities of mucus and blood. During several days the mucous bloody discharges alternated with the passing of hardened feces; this condition was succeeded by an attack of diarrhea. Because of poor control of the bowels a pad had been worn continuously to prevent soiling by the discharges. The alternating attacks of constipation and mucous discharges continued from August, 1901, to March, 1902 when the man came under my care in the Clarkson Hospital.

At this time Mr. B. had the appearance of ill health, and poor nutrition; on examination the anal sphincter was found weak and incompetent, the rectum to the touch and by inspection was the seat of five ulcerations of different sizes, one being as large as a silver dollar and the others smaller. On introducing the sigmoidoscope numerous ulcerated patches were observed in the sigmoid. The edges of all ulcerations were elevated, and where palpable were, together with their bases, rather indurated; the surfaces were pale.

The treatment ordered was irrigation of the bowel, with bland or stimulating solutions of salt and silver nitrate; the recumbent position was insisted on and a restricted but nutritious diet prescribed. Little improvement followed this practice, although with some minor alterations it was kept up from March 13 until June 2. At this time I decided to do a left inguinal colostomy for the purpose of giving rest to the ulcerated sigmoid and rectum, as well as to admit of more positive local treatment.

Operation.—On opening the abdomen a surprising condition was revealed, the inferior mesenteric vein was very much enlarged and its walls thickened. All of its branches as far as they could be inspected were uniformly in the same strikingly swollen shape. Although I then realized that a colostomy would do little good the gut was fastened to the abdominal walls. After thinking the case over for a couple of days, I loosened the unopened gut and returned it into the abdomen.

Two months' further trial with local, dietetic and medicinal measures, there being no improvement, I opened the abdomen to determine whether or no there could be discovered in the pancreas or elsewhere along the route of the inferior mesenteric vein, an enlargement or interference by pressure on the vein near its entrance into the splenic vein. Nothing strikingly unusual was discovered about the pancreas except that it was thicker than normal and not quite so fixed. However, a considerably dilated stomach was found, and thinking this might, by dragging, possibly produce some interference or kinking in the circulation of the veins, a gastroplication was carried out after the manner of Moynihan. A Morrison operation was also done with the hope of relieving the portal system, and in this way lessening the congestion in the inferior mesenteric vein. My patient was much improved by these procedures; he gained in weight and his symptoms were better, but he was still an invalid. Two months later I established an artificial valvular fistula in the cecum for the purpose of complete, direct irrigation of the entire large bowel. Great improvement resulted from this last practice, the patient gaining 20 pounds during the next two months. There still was at that time some slight mucous discharge. I sent the man home, his many months' care at my hands having ended in a remarkably improved state. He was instructed to keep up the daily local treatment. A recent letter tells that he has allowed the fistula to close and that he is beginning to relapse. I have never seen such a uniform chronic enlargement of veins.

When we recall the fact that the inferior mesenteric vein passes under the pancreas on its way to empty into the splenic vein, and the many pathologic, as well as congenital, alterations that may be found in the pancreas, possibly the observations made at the time of operation would be sufficient to account for the varix. From this point of view, reasoning from everyday experience in varicose ulcers of the lower extremities, the ulcerated bowel must be looked on as secondary to the varix of the inferior mesenteric vein. From the point of view, however, of the fact that veins carrying blood from chronically inflamed areas sometimes participate in the changes incident to the inflammatory process, we might reasonably conclude that the varix was in part the result of the long-continued prolapsus of the rectum, and the accompanying ulcerations of both the rectum and sigmoid, and probably of the descending colon also. All other veins in the abdomen were apparently normal. The only organs whose size and position were found abnormal were the stomach and pancreas.

During the past year I have had a case of chronic ulcerative colitis, which I have cured by means of an artificial valvular fistula in the cecum. In both cases I established an opening for a 30 F. catheter, in order that I might employ a reasonably good-sized flushing stream. The use of the open appendix as a channel for irrigation seems to me like using a toy pistol when an efficient firearm is essential. It is an unusually large appendix that can carry an 8 F. or 10 F. catheter, both too small for other than dribbling irrigation. I must acknowledge that some distinguished authorities have found this, the appendix channel, useful. In my cases I believe I did better by my patients in removing the appendix from each.

DISCUSSION.

Dr. F. D. Smythe, Memphis, Tenn.—The custom has been recently adopted at the hospital where I am attending surgeon to refer the cases of chronic colitis entering the service promptly to the surgeon for operation and treatment for the reason that medical treatment heretofore has proven unsatisfactory. It was formerly our custom to resort to dilatation of the sphincter and irrigation of the colon followed by application of silver nitrate. Improvement usually followed such a course, but the patient soon relapsed, necessitating a repetition of the treatment, the patient almost always finally dying or drifting to another physician to undergo a similar treatment, with no better result.

Dr. Goltman, Memphis, at a meeting some months ago, detailed a course of treatment that he used for acute dysentery, the main feature of which was the dilatation of the sphincter under anesthesia, which treatment he asserts is sufficient in his hands. I have never employed this method.

The plan adopted by Dr. Summers in the treatment of his case is the same that I have employed for some time and with very gratifying results. I always make a good opening in order to introduce with ease a large tube for irrigation, paying no attention whatever to the appendix unless it is to effect its removal if time is not too much of a consideration. Such cases should be treated on surgical principles, thoroughly cleansed, rest of the part and attention to the diet. By such a course we have accomplished far more than was possible by medical treatment alone.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

Dr. Samuel E. Milliken, Dallas, Texas.—Ulcerative colitis is one of our prevalent maladies. When Dr. Weir, New York, suggested last year at the session of the American Medical Association the use of the superfluous appendix as a means through which to reach the lower bowel, I was in hopes that I would have an opportunity of applying this method of treatment to some of our cases of ulcerative colitis, but up to the present time I have had no such opportunity. I have resorted to the various medicaments through the rectum and with varied and unsatisfactory results. I am glad to hear that there are better methods than those suggested by Dr. Weir. The methods suggested by Dr. Summers and the last speaker, i. e., the establishment of a fistula in the anterior wall of the cecum will possibly give more direct connection than the simple appendiceal method. I regret that an opportunity has not been afforded me to follow the suggestion, but it seems to me that this is a logical means of remedying what is with us a rather prevalent condition. Like the last speaker, I know nothing of the pathology which has led up to this condition.

Dr. John E. Summers, Jr., Omaha—I hoped that some one would say something about the anomalies of the pancreas or its changes in position. As the inferior mesenteric vein runs under the pancreas to empty into the splenic vein, which lies in a groove in the under surface of the pancreas, an obstruction in the return flow in the inferior mesenteric vein can be well imagined, provided there be an abnormality in the pancreas. I do not know what it was, but it seemed to me that, in this particular case, there was something unusual developed in the posterior area of the pancreas, and that this caused continuous interference with the current in the inferior mesenteric vein with the resultant varicosity. I merely mentioned the vermiform appendix as a route for the irrigation of the colon, as I had been impressed that Dr. Weir had advocated it as a kind of surgical joke. In the discussions of the surgical section of the New York Academy of Medicine, it will be noted that one or two surgeons have advocated this appendix route and have reported satisfactory results. One of these gentlemen stated that by dilatation one could succeed in getting the appendix to carry a No. 10 F. catheter. Everyone knows that such a caliber is too small for flushing purposes. When you want to flush out a cavity you must have a current and, therefore, I think a 30 F. catheter or 40 F. catheter none too large. You can remove the catheter, introducing it only when the bowel is to be irrigated. If the operation has been well done there will be no leakage.

CONGENITAL DISLOCATIONS OF THE RADIUS.[*]

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History.—In November, 1902, X. Z., a boy of 13 years, was brought to my office. Three days after his birth disability and deformity were noticed at the left elbow and in the left hand. In early life the general use of the limb was practically the same as at present. As years have gone by the limb has become neither more nor less useful.

Examination.—The left upper extremity is materially shorter than its fellow. The left forearm is in extreme pronation; it can be supinated but very little, the lower end of the radius moving but slightly on the ulna. As the limb hangs by the side the back of the hand looks forward and inward. If the boy is asked to flex the elbow he does it by abducting the arm to 45 degrees and throwing it forcibly forward. With the hand on the abdomen and chest he can then flex the elbow to 90 degrees, but not further. Flexion of the fingers is fairly good; extension is weak and imperfect. The thumb is flexed and adducted in the palm of the extended hand, being rotated somewhat out. Flexion of the fingers is made over this palmar-flexed thumb. When offered a coin the boy lifts the arm, rotates it in and throws the palm of the hand inward, then outward and forward to receive it. He makes no ordinary gestures in attempting to receive proffered articles. He uses the affected hand but little.

The elongated left radius is dislocated upward, forward and outward, lying on the outer and anterior aspect of the humerus. The condition is shown in the accompanying *x*-ray picture and in the photographs. Measurements are as follows:

Circumference of the right arm at its middle, 7½ in.; of the left arm at its middle, 6½ in. Circumference of the right forearm 2½ inches below the elbow is 7½ in.; at the same point on the opposite side it is 6 in. The right upper extremity from the tip of the acromion to the tip of the middle finger is 25 in. long; on the left or affected side it is 20½ in. long. With the elbow flexed the right arm measures 11½ in. from the tip of the acromion to the olecranon, on the opposite side it measures 10½ in. The right ulna is 8¼ in. long, the left ulna has a length of 6¾ in. The cup-shaped upper surface of the radial head is plainly felt, some 1⅛ in. above its normal. It can be satisfactorily palpated. It seems to be of normal size. It rests anteriorly on the external humeral ridge. The bones below seem to be normal in shape. Innervation of the extremity is good.

The boy is otherwise normal; his mental condition is excellent. His general appearance is that of boys of his age.

The boy was brought with a view to determining whether he would be apt to be helped by an operation. At first thought I felt that resection of the upper end of the radius would permit freer motion. However, on considering that the condition was due to defective construction, that the entire limb was *imperfect* and that the hand was deformed as well as the elbow, it seemed probable that any operative procedure would be tentative. The parents declined operation unless given a fairly positive assurance.

So few cases of this affection have been observed and reported that one is destitute of data on which to form an opinion as to the value of operation. Thus, while various observers have noted the pathologic condition postmortem or have described the symptoms in living cases, I am unable to find but three instances in which recourse was had to operation. (*Vide infra* for question as to the authenticity of the second of these.)

Langenbeck in 1865 made a simple resection of the entire left elbow of a 6-year-old patient of Mitscherlich.[10] No result was observed, as the child died some weeks after operation.

Bessel-Hagen[20] made a simple resection of the head of the radius with the best result.

He found the form of the radial head altered, almost spherical and smooth. The cartilaginous covering had disappeared in many places. The dislocated and badly deformed annular ligament covered the most external end of the bone like a distorted cap, partly bound to it by fibrous strings. Bessel-Hagen did not anticipate a successful result, and resorted to operation only after much persuasion. But happily after the operation the formerly half-flexed arm could be stretched out perfectly. Through methodical, energetic movements full supination was soon possible. Over a year after the operation the girl could perfectly stretch and bend and supinate and pronate the arm. The bones slid easily and smoothly on each other, the sensitiveness had disappeared and strength for work was increased.

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[*] Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

Bonnenberg[25] reports a case referred to him by Hoffa. I cite this at length as it is fully described by the author. The result is seen to be one of but moderate improvement. Further, the type of the affection approaches that observed by me.

The patient was a girl of 20 years. The right radius was dislocated forward. The right arm appeared shorter and weaker than the left, especially in the forearm. The forearm was in position of supination, the hand being dorsally flexed. While the radius approached the normal, the ulna was twisted in its lower part and in the upper and middle thirds was more convex than normal. The elbow joint could only be extended to an angle of 155 degrees. In the extended position was clearly felt *the epicond. internus humeri, the point of the olecranon* and the epicond. externus humeri. If the arm was flexed the head of the radius glided up on the anterior surface of the humerus. Pronation of the hand was not possible. The patient had worn apparatus which held the head of the radius firm, but its weight and pressure were annoying, and since an improvement through its use could be looked for only after a very long time the patient preferred operation, which was performed by Bonnenberg and Hoffa.

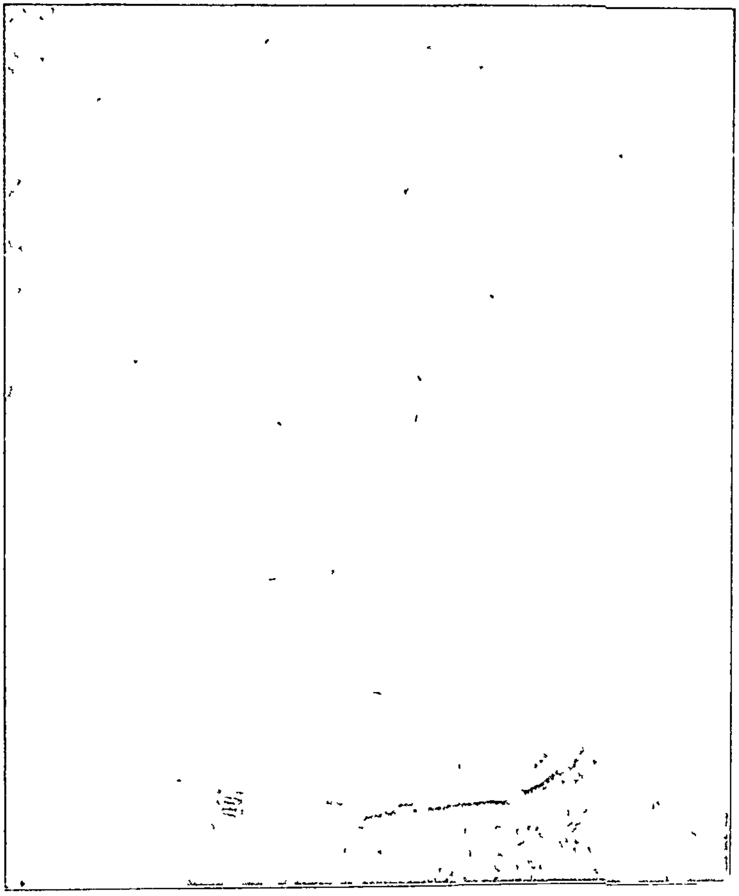

Figure 1

An incision about 6 cm. long was made on the outside of the elbow joint over the external condyle of the humerus, parallel with the long axis of the arm. The joint capsule was opened. The entire outer half of the lower end of the humerus was slightly concave, so that no clear limit existed between the eminentia capitata and the part of the epiphysis not covered with cartilage. The cartilaginous covering of the eminentia capitata reached about 2 cm. higher than normal. The outer edge of the lower end of the humerus appeared much thinned. In the curved lower part of the humerus the head of the radius lay over the eminentia capitata. It was completely covered with a fibrous capsule which was attached about the neck and was connected with the outer part of the joint. The capsule was split over the head, and after the periosteum was loosened a piece of the radius about 3 cm. in length was taken off, the cut surface smoothed and the radius passed under the eminentia capitata of the humerus. The capsule which covered the head of the radius was taken away. Flexion and extension of the elbow joint were now entirely unhindered. Not so, however, with pronation and supination. Therefore an incision about 4 cm. long was made over the styloid process of the ulna and after loosening up the periosteum a piece about 3.5 cm. long was taken from the lower end of this bone. Then pronation and supination were possible. Healing by granulation took place *in about a month,* when movements were begun. The arm was massaged daily. Electrical treatment. A little later, since there was still present the spiral twisting of the radius, osteotomy was performed between the middle and lower thirds. Again healing by granulation. When this was complete systematic attention to movement was given. At the end of a few months the condition was as follows:

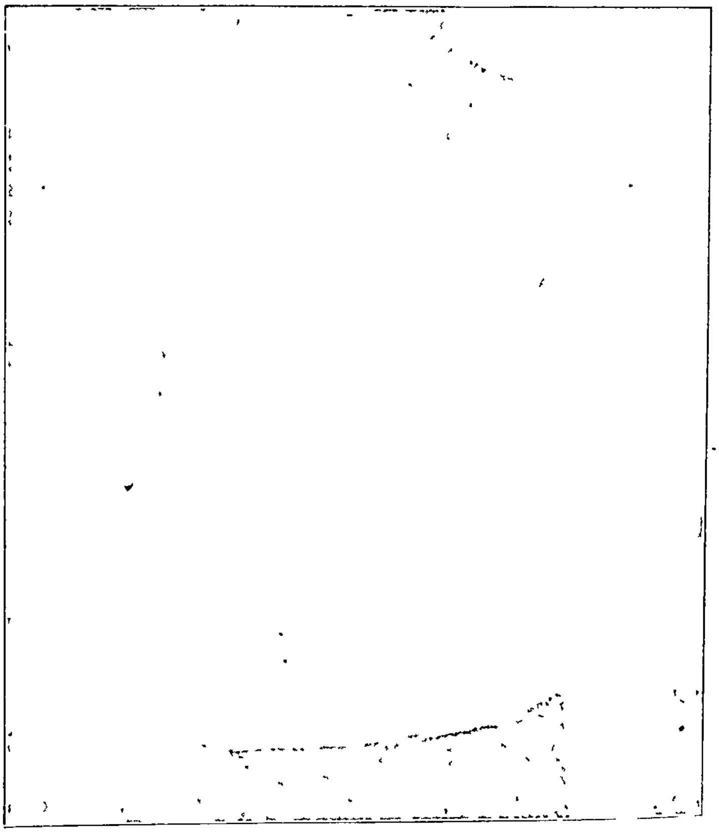

Figure 2

The radius ends over the external condyle of the elbow; there is decided weakness of the right arm as compared with the left. Measurements: Right middle upper arm, 22 cm.; left middle upper arm, 26.5 cm.; *thickest part of forearm, right, 20 cm.;* left, 23 cm.

Voluntary pronation and supination are not possible on the affected side. The case may be said to be moderately improved. The piece that was taken from the upper end of the radius was 3 cm. long; the diameter at the head, 15 mm.; at the neck, 13 mm. Demarcation between the two was scarcely present. The head was defectively developed; it was infantile; it was lacking in cartilaginous covering except at a place on its posterior circumference about 1 cm. in diameter. Here the head of the radius glided over the anterior surface of the humerus. A characteristic glenoid cavity was not present. Good pictures show the condition before and after operation.

Bonnenberg[25] collected 30 cases in 1893; of these 12 were double, 18 were single. Since that time the only observers of whom I can find record are Ambard,[23] Abbott[21] and Bergtold.[19] Ambard reported a double luxation in a man of 28 years who applied for treatment for excoriations of the external aspect of each elbow. Two very prominent protuberances on the outer part of each elbow were noted, which were brought into action by the different movements of the forearm. On looking at the posterior surface all of the middle and internal part appeared normal. But at the external view there was a prominence rounded over its lateral surface, flattened at its superior extremity. From in front the region of the elbow appeared normal. On palpation this bony prominence could only be considered as the upper extremity of the radius itself. In supination and pronation the radial cup could be rolled between the fingers; in flexion or extension it was lowered or raised. In spite of the abnormal situation the superior extremity of the radius was strongly connected with the other bones of the joint. All of the ordinary movements of the elbow, as well as the muscular force, were perfectly preserved. The length of each radius was 1 cm. more than that of the ulna, whereas normally the radius is 0.75 cm. shorter than the ulna. The ulna and humerus were normal. The two dislocations were absolutely symmetrical. The rest of the skeleton was normal, save that the two clavicles were prominent at the middle part. The nose was sunken in on account of caries of its bones and atrophy of the inferior turbinate; there were various ocular lesions pointing to hereditary syphilis.

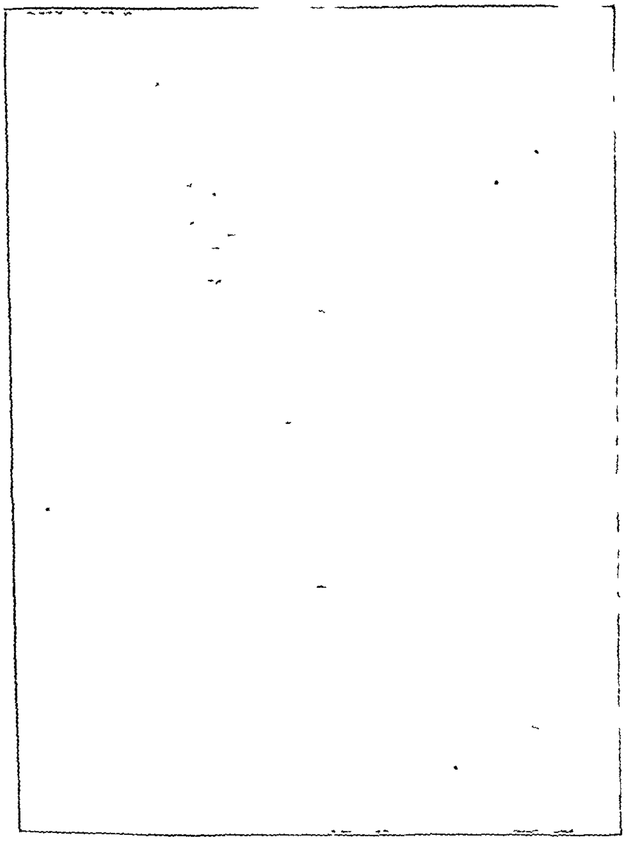

Figure 3

The dislocations of the radii were noticed soon after birth. There was no family history of the trouble. The writer is inclined to think this patient a hereditary syphilitic, and thinks it possible (?) that the deformity was due to this trouble. Excellent radiographs are given.

Bergtold[19] gives an admirable account of a similar case, except that while flexion and extension were perfectly preserved the forearms were in extreme and fixed pronation. Abbott[22] reports on 9 cases, 7 of which occurred in one family, the cases having been scattered over four generations; 5 of the cases belonging to three generations had been examined personally by him, and all presented dislocation of the radius forward in one or both arms. Flexion and extension in all were free, but there was no movement of pronation or supination. In all the cases the deformity had caused the patient much inconvenience; no member of the family was the subject of any other deformity. Dissections of the elbows of the youngest of these cases were shown by Abbott at a meeting of the London Pathological Society, the chief abnormality in one being a large protuberance from the outer side of the coronoid process, fixed to the neck of the radius and possessing an extra center of ossification. The dissected elbows of a child of two months were shown. On the right side there was a dislocation of both bones directly backward, the articular end of the humerus being deeply cleft and much altered in shape. On the left side the radius was dislocated backward, upward and inward, still keeping its normal relation to the ulna which articulated with a mass of cartilage attached to the lower part of the shaft of the humerus, representing the trochlea and internal condyle, the lower end of the humerus consisting only of external condyle and capitellum. In this case the prime trouble was evidently in the humerus. A living example of congenital dislocation of the left radius backward and outward in a girl of 21 years was also shown. The president of the society, Sir George Humphrey, thought that in all cases the displacement was slight, and that all seemed to be due to want of proper condition of the orbicular ligament. (There is a similar case in the Cambridge Museum in which both humerus and radius are deformed, the neck of the latter being longer than it should be, thus causing difficulty in flexing the forearm.)

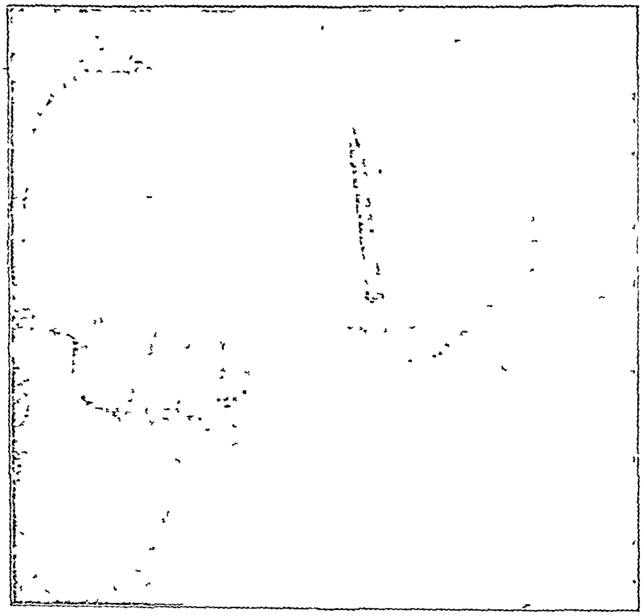

Fig 4.—Showing the position of the limb when the patient attempts to receive a proffered object.

In a further discussion of these cases Abbott says that in all the deformity was first noticed when the child began to use its hands, and in no member of the family was any other deformity present. This tendency has twice been transmitted by males, twice by females, while in only one instance has the person transmitting it been herself the subject of the lesion. In one case it has occurred in the third generation, both father and grandfather transmitting the tendency without being affected, and the affection of the grandfather's brother pointing to the deformity having existed one generation earlier still. Abbott states that among cases of congenital dislocation of the radius that have been previously described he has been able to find but one in which the deformity was hereditary. This was the case of Pye-Smith.[16]

It is plain that only those cases can be accepted which (*a*) have been observed by a physician directly after birth, or (*b*) which are hereditary, or (*c*) which coexist with other deformities. If this test be applied it throws out such cases as that of Bessel-Hagen.

Herskovits[18] deduces as hypotheses to explain these luxations: 1. External injuries to the belly of the mother (Cruveilhier) or muscular activity of the fetus (Chaussier). 2. Disease of the capsule or the ligaments (Sedillot), hydrops or fungus (Parise, V. Ammon). 3. Disease in the central nervous system, with consecutive contractures (Guerin) or muscular paralysis (Verneuil). 4. Peculiar fixation of the limbs *in utero* (Dupuytren). 5. Defective construction of the joint (Paletta, Breschet, V. Ammon).

Apprraillé[24] has written an exhaustive monograph on congenital malformations of the upper extremity of the radius. His cases are of congenital absence or defective development of the bone rather than of dislocation. From the functional point of view, however, they also are characterized especially by absence of the movements of pronation and supination of the forearm. He believes them to be the result of quite extensive amniotic compression occurring before the formation of the skeleton.

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DISCUSSION.

Dr. John T. Bottomley, Boston—My personal experience with congenital deformities of the radius has been absolutely *nil.* I have here two reports of cases from Dr. F. J. Cotton of the out-patient department of the Boston City Hospital, which I will read. The luxations were similar, though not congenital:

Case 1.—*Syphilis of the elbow, congenital.*—M. R., aged 15, doubtful specific history. Three years ago trouble in the left elbow. She was first seen two years ago, at which time there was backward luxation of the radius, bony cartilaginous masses at the lower end of humerus, the radial head and the ulna. There was much loss of motion, especially of supination, of which there was none. There was not much pain and no spasm. Operation refused. She was treated with potassium iodid for two or three months and then lost sight of. About a month ago she was looked up, and I found the motion slightly improved, but the masses are unchanged.

Case 2.—B. H., aged 17. For two years she has had trouble with the elbow, which has not been painful, but has caused much limitation of motion. Congenital specific history. At the present time is under treatment for iritis. Her condition was almost exactly like Case 1, but with dislocation of the radii at both elbows. She was operated on in December last, at which time there was excision of the heads of both radii with transplantation of the distorted orbicular ligament to original site. Early mobilization followed, and she was treated with potassium iodid. Ether was administered once in order to free adhesions. Excellent results followed, and all motions are now practically normal on one side; much improved and still improving on the other side, but supination is not free. Both cases were what is described as false tumor albus. The radial luxation results from the thrust of the raw cartilaginous formation. There is no synovial disease.

Dr. Fred. B. Lund, Boston—I have seen the cases reported by Dr. Cotton, and the result he has obtained in one arm is certainly remarkable. The motion is not perfect, but it is a material improvement, and it is certainly a revelation to see what that operation has done.

Dr. De Forest Willard, Philadelphia—I have seen two or three cases of congenital dislocation of the head of the radius and a number of cases where there have been various congenital defects of this region. When the humerus or the radius are affected the hand is usually carried in the position of extreme pronation. I do not think that any law can be laid down in regard to operation in these cases; every case must be studied according to the conditions presented, and from the standpoint of the type of distortion. In a case presenting the symptoms described by Dr. Powers, the chances are decidedly in favor of a gain by excision of the radius, together with section of the muscles to relieve the extreme pronation. In congenital and birth palsies from injury of the brachial plexus we nearly always have this same pronation. It may be relieved by cutting off the flexor and pronator muscles from their attachment to the humerus and ulna. The arm can subsequently be used 5, 10 or 15 per cent. better, while the improvement in the appearance is 30 to 40 per cent.

Dr. Charles A. Powers, Denver—One's first thought in such a case as this would be to take out the head of the radius. The parents refused to have this done unless given positive assurance that definite benefit would result. In view of the associated conditions and after a careful study of the literature on the subject I did not feel that I could give them this assurance. I believe that Willard's suggestion of dividing the internal rotators of the humerus to be a very useful one. I should be obliged to carefully study the histories of the cases cited by Dr. Bottomley before being certain that they were analogous to the one which I present.

Reasons for Joining the Medical Association.—To be identified with the county, state and national organizations, just as every patriotic citizen exercises his rights of suffrage in local, state and national affairs. To assist in raising the political and social standing of the profession to a higher plane. To show interest in all matters medical which should demand the attention of any legislative body. To assist in demonstrating that the medical profession is not less noble to-day than hitherto; that its members have not grown so "commercial" as to consider their skill as simply a "stock-in-trade" for sale to the highest bidder, but that love and sympathy for the human race are the prime instigators of their every action. To assist in unifying the opinions of the best professional conduct, and in supporting such a code of ethics that the members may not be constantly harassed by temptations and uncertainties as how to proceed.—*N. Y. State Jour. of Med.*

NECESSITY FOR MORE CARE IN THE TREATMENT OF SKULL FRACTURES.*

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The substance of this paper is based on the following propositions:

1. Fractures of the skull are not always recognized as such until too late to receive proper treatment.
2. Fractures of the skull when not properly treated at or about the time of fracture, occasionally result in death, and if not in death in serious remote consequences.
3. Fractures of the skull, when properly treated, usually terminate satisfactorily.

Every practitioner is aware that a large number of skull depressions, with their usual concomitants, are constantly forcing themselves on our attention. It is, we believe, right to assume that surgeons are familiar with the mischief that such depressions create, and would not knowingly allow them to remain were they recognized at the time of injury. As no special reasons exist for these omissions, we are forced to the conclusion that carelessness at the time of the first examination is responsible for the errors in diagnosis and their consequent evil effects.

The conclusions of Hippocrates—sometimes credited to Sir Astley Cooper—that "No injury to the head is too slight to be despised, nor too severe to be despaired of"—were never clearer than to-day, and still many of us fail in appreciating their significance, or if appreciating, fail to profit by them.

An apparently insignificant scalp wound may be associated with a serious fracture beneath, and even a contusion of the scalp may cover a fracture, with depression and accompanying laceration of brain tissue and coverings. The scalp wounds may be ever so carefully dressed and the subsequent healing be ever so perfect, but unless our range of inquiry is sufficiently comprehensive to take in all possibilities, deeper injuries may remain, to be followed by headache, epilepsy, or even insanity. Usually these cases do not present themselves for examination until the evil effects of injury are fully established and little can be done for their relief.

Roberts tells us in his "Fractures of the Cranium" that their importance and interest center not in the damage done to the bone, but in the associated injuries sustained by the brain and its membranes. He also tells us that the inner table is nearly always more extensively broken than the outer. Keen says that "fractures of the inner table alone can only be suspected." Starr (Brain Surgery, p. 27) reports two cases operated on by McBurney, of which he says: "The pressure of splinters of bone cracked off from the inner table of the skull and imbedded in the brain in the motor area, for the arm with cysts at the same place was demonstrated." Da Costa warns us by writing: "The prognosis of fractures of the vault depends on the extent of brain injury, rather than on the extent of bone injury."

In this connection we must not forget that any injury sufficiently violent to produce a fracture of the skull, is also sufficiently violent to produce injuries to the soft parts beneath. In support of this statement we may be pardoned for submitting the following, taken from the clinical records of the writer: From an analysis of 86 cases where injury to the skull wall existed, 68 were accompanied with probable, and 57 with positive, evidence of cerebral disturbances. These conclusions were verified in 52 cases through operation. Clinical reports of competent observers, coupled with everyday experiences, have clearly demonstrated that blows or falls on the head may cause serious trouble, both present and prospective, without producing fracture to the skull wall. If this be true, how much more likelihood is there of such conditions being present when fracture exists, especially if that fracture be depressed. It is on the effects of these injuries, rather than on the injuries themselves, that we would lay emphasis, and to invite attention to the necessity of a full and correct diagnosis at or about the time of injury, in order that either condition may be properly treated. Every case of recent head injury, however trivial it may appear, should, we believe, be treated with the greatest consideration, lest damage to hidden and important structures escape our attention, thus leaving a foundation for future trouble which too often is irreparable.

What shall we do to improve existing conditions? Make a thorough examination at or about the time of injury if possible, and then rationally treat the conditions found. Open wide the scalp wound, carefully examine the bone beneath, and if this be found injured, then examine the brain. An examination of the tissues suspected of injury when cleanly and carefully made, does not expose the patient to any special dangers, while it may be of the most significant value, by determining conditions and leading to treatment that will result in the prevention of very undesirable consequences. This is a rational surgical procedure based on science and common sense. On this point Otto Schar, in the *Archives of Clinical History*, says: "Epilepsy following injury to the skull can, in the majority of cases, be avoided with almost absolute certainty if only active and proper treatment be instituted at the time of injury." Again we quote from Da Costa when he says: "Trephining cases where no symptoms exist, although there is marked depression, often prevents disastrous consequences arising in the future."

We believe that all fractures of the skull with depression should be trephined, the depressed bones elevated, and underlying soft parts carefully examined, and if found injured, repair attempted.

We believe that all fractures of the skull with or without depression when symptoms of cerebral disturbance exist, should be trephined. We believe that all skull fractures, regardless of the presence or absence of cerebral symptoms, should be carefully examined before the soft parts are closed over them.

In operation in no other part of the body does the surgeon close the wound until he has satisfied himself as well as may be, as to the conditions beneath.

Under ordinary conditions the necessary and proper treatment may be carried out. Thorough cleansing of the parts to be operated on may be secured in almost any room; the operator and assistants must be clean, as must the instruments, sponges and dressings. The scalp is raised, the underlying bone examined, and if fragments are found, they must be removed. A button of bone is then removed with the trephine and the parts beneath examined. If found necessary, the opening is to be enlarged with the chisel. If only the dura be torn, it may be united with catgut; if the brain tissue be injured, any ragged edges must be removed—the freshened edges approximated and so retained with fine sutures—all depressed bone must be elevated, when the scalp may be closed in the usual way with or without gauze drainage as circumstances may seem to warrant.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

Every patient to-day, of whatever condition, is entitled to intelligent treatment when injured; every surgeon should be prepared to give this treatment when called on to do so. These statements are especially true when associated with injuries to the head. We should, therefore, aim to be thorough in our work, guided by the clinical experience of the past, to the end that full justice may be done both patient and doctor.

Carelessness in the treatment of the class of cases referred to, appears to be responsible for at least much subsequent suffering, and ought to be discouraged.

Drawing on the clinical experience of the able observers quoted in this paper, as well as from the daily experiences of practitioners generally, we are forced to the conviction that not all that is possible is being accomplished in head surgery. Even were the remote consequences less deplorable than we find them, there would still be sufficient reason for reformation along these lines.

We labor night and day with commendable energy, and write volumes on conditions of the appendix; the midnight lamp finds us devising contrivances for the repair of the intestines; the gall bladder and its ducts command our closest attention—then why make the skull, the storehouse of the most important organ in the body, a matter of secondary consideration?

We all know that any impairment of the brain seriously affects the entire economy. We should also know how when possible to prevent this impairment, for here, as nowhere else, do we recognize the force of the adage, "Prevention is better than cure."

There are a greater number of heads than appendices. By virtue of their exposed anatomic positions they are more frequently in need of repair than are the intestines. When seriously injured, they expose the patient to greater dangers than do gallstones.

Why not give them that consideration their importance entitles them to?

DISCUSSION.

Dr. J. Garland Sherrill, Louisville—This subject is one of great importance to all men who are doing surgery, especially cranial surgery, and I believe that many cases of this class are not treated properly as mentioned by the speaker. This occurs for many reasons, and a very important one is, that the diagnosis is not made, and we can only say that diagnosis of fracture with trouble within the cranium is not always easily made. I believe that the old classification of symptoms is largely responsible for this condition. It is possible to have grave lesions of the brain with but slight symptoms, and sometimes with extensive damage to the brain the patient will be able to be up and about, the symptoms coming later. If we have the symptoms of compression of the brain, then we have a demand for an operation, but there is no less a demand for operative procedure where the symptoms indicate what has been formally known as concussion of the brain. I believe when you make a diagnosis of concussion of the brain you should always make a thorough examination of the shaven scalp. Localized pain on pressure is of the greatest importance in making your diagnosis. In connection with this symptom the use of the percussion hammer or your finger will often elicit a crack in the skull, which you would not otherwise be able to discover. In connection with these symptoms you should watch the pulse, respiration and pupillary reaction; these are quite important. In these cases the temperature rises as the blood flows at the base of the brain and the pupil becomes dilated and fixed.

In concussion of the brain you often meet another symptom, a rapid irritable pulse, while the pupil is not fixed and dilated as in compression of the brain. Taking these things into consideration a diagnosis of trouble within the skull can be made, and when this fact has been established I believe that most of the fractures of the skull should be investigated, except those very serious fractures of the base of the skull where there is very little hope for relief, but I believe that the field for operative procedure will be widened, even in these cases. All depressed fractures of the skull and all compound fractures should be trephined, and even linear fractures, especially when brain symptoms are present.

Dr. Carl Wagner, Chicago—In connection with Dr. Earles' very suggestive paper I would like to report two cases which tend to illustrate the imperative necessity of operating on all cases of depressed fracture of the skull. Of these two, the first one represents the one extreme, where the injury appears to be so slight that it hardly seems worthy of attention, or even escapes notice, while the second typifies the other extreme in which the case is seemingly utterly hopeless and beyond human aid.

In the first case the mother called me on account of an eruption of the skin, which she took for scarlet fever. The skin eruption did not resemble that of scarlet fever or measles, neither were any throat symptoms present. Temperature 102. The child had had several attacks of convulsions, and on being put on the floor described semi-circles to the right and then fell, insteading of walking in a straight line. This attracted my attention to the brain, and examination of the head I found a sensitive little spot and a small crust covering a slight abrasion of the scalp.

The mother then seemed to remember that the child had fallen against the sharp edge of the leg of the bed about two weeks previously. The child had not complained at all at that time. On operating, a stellate fracture with depression of the bone and pus between bone and scalp, as well as oozing through between the bone splinters from underneath, was disclosed. Another abscess was found directly under the dura mater, containing about a half-teaspoonful of pus. Immediately after the operation the temperature became normal and the child recovered quickly. This case was presented to the North Chicago Medical Society three years after the operation, where I could show that the whole defect of the bone had been closed up by new osseus tissue.

The second case, a boy of 7, fell from the third story on a stone pavement, head first. Dr. Williams and Dr. H. Wagner, who had been attending the boy during the two hours since the accident, informed me that the child had been lying absolutely motionless, with knees and arms flexed, with stertorous Cheyne-Stokes respiration, during the entire time, almost pulseless, the pupils dilated and fixed and did not respond to the effect of light. There was a profuse hemorrhage from the right ear, both nostrils and mouth. On top of the right side of the head near the frontal region of the skull a deep depression large enough to admit three fingers could be seen.

I made an extensive Lannelongue incision, without anesthetic. The injured field was exposed. The anterior and posterior branches of middle meningeal arteries were tied, the ruptured longitudinal sinus tamponed, the lateral sinus on the right side blocked with gauze. The bony defect was very nearly as large as the palm of the hand. A bi-parietal fracture, which had torn the longitudinal sinus, extended through the temporal bone, which was afterwards verified by the examination of the ear, where Dr. Gradle found a scar in the drum and bone. The boy left the hospital fourteen days after in good health and has been for the last seven years a good, bright scholar in school.

Dr. T. J. Sullivan, Chicago—Cases of fracture of the skull may be divided into two classes: simple and compound. The simple cases are cases to be placed under observation, and when the conditions warrant interference by surgical intervention. The compound fractures, of course, should always receive all the relief that is afforded by modern surgery, and the wound should be dressed with a primary antiseptic dressing at the time of the traumatism, so that when the patient is received by the surgeon the case from the time of the injury to the time of the operation is controlled by primary antiseptic dressing. The best antiseptic is bichlorid of mercury, in a strength of 1 to 1000. All the compound fractures certainly require surgical intervention. In these cases the operation should be proceeded with with all surgical precaution in the way of elevating the fracture and restoring the condition of the patient. In cases where the meningeal vessels are torn, and where it is very difficult to do the operation without hemorrhages, we can safely place a quantity of the normal salt solution within the dura. In some of those cases we have very severe hemorrhage from the meningeal arteries, and good may be derived from the little device referred to. The Mosaic may be secured to the dura by careful adjustment with a very fine through-and-through catgut suture. In this way we can control the hemorrhage, and after about forty-eight hours we can reduce the Mosaic and insert packing, which may be done at once in those cases, where hemorrhage is not an important factor. In that way we provide against the danger of adhesions of the dura and the scalp. Later in those cases in which that procedure has not been carried out and we have adhesions between the dura and the scalp, we have a very beautiful little procedure that we can resort to. By making a large flap and dissecting it off carefully and then by running the chisel in between the parts, we can keep the dura separated from the scalp and provide against adhesions. Of course, five minutes is too short a time to systematically dissect these parts. It seems to me that all classes of injury to the skull can be divided into two classes, simple and compound, and all cases of simple fracture should be kept under observation and surgical interference undertaken as soon as the motor symptoms are noticed. The compound fractures demand immediate operation under the most thorough aseptic methods. When sepsis does occur, a median incision should be made in the skull and drainage provided. At least in one instance of compound fracture of the skull, which had gone over for eighteen months after the time of the injury, it was possible to save the patient by those great multiple incisions. In this case the temperature had run up very high, the patient had had convulsions, but was relieved by this operation.

Dr. B. B. Davis, Omaha, Neb.—When I see a case of head injury I always try to keep this point in mind. It does not matter how much the fracture or how small the fracture is, or how much injury there is to the membrané or to the bone, the point that we are concerned with more than anything else is the extent of the injury to the brain. I have been very much surprised in some instances to see quite an extensive fracture of the bone, with practically no injury to the dura or to the brain, and, on the other hand, I have seen cases where the fracture was insignificant, and have found a great deal of injury to the dura and perhaps to the gray matter of the brain. To decide when to do an operation immediately and when not to do an operation is not always so easy, and I think we should always consider, first, is there any danger if we do not do the operation, and second, are we going to leave this patient in a bad condition if we do not do it? I think we have trephined in two or three instances unnecessarily. In some cases I have not found enough pathology to warrant the operation. The question is whether there is not enough cicatricial tissue to form dural adhesions, so that in the future that patient may have paralysis due, not to the original injury, but to the trephining. I think we should not do this operation unless it is absolutely necessary.

Dr. G. S. Brown, Birmingham, Ala.—I merely wish to report a case of injury to the middle meningeal artery with resulting paralysis. I merely report it because it is a case of very unusual occurrence, and I never heard of one being reported before. It occurred in my practice about three weeks ago. I operated on it and found a very small clot about the size of a white bean. The convulsions and paralysis and all the other symptoms disappeared two hours after the operation, and in ten days the child was up and well.

Dr. Charles H. Lemon, Milwaukee, Wis.—In injuries to the skull, especially those caused by a fall from a height, we sometimes find serious intracranial disturbance without demonstrable hemorrhage within the cranial cavity, and I think it is the experience of those who have seen many of these cases that some cases are allowed to die under a diagnosis of concussion of the brain, which might possibly have been saved if subjected to operative procedure. There is a pathologic condition of the brain following trauma that is oftentimes overlooked. We may have, and we frequently do have, contusion of the brain itself and its membranes, and as the result of that contusion we have edema of the brain causing intracranial pressure of a fatal character which might be avoided by trephining and drainage. We are expecting in the brain a power of resorption that we do not expect in other tissues of the body. We seem to have lost sight of the fact that in the arrest of the fall, when the delicate structure of the brain is contused by its sudden sharp contact with its bony envelope, it must undergo the same pathologic process, with all its attendant inflammatory changes, that other soft tissues similarly injured undergo more favorably situated for the purpose of expansion.

There recently came under my observation the case of a man who fell forty feet, receiving a compound fracture of the right wrist with numerous contusions of the body without apparent injury to the head. Ten days after the injury he developed a partial paralysis of the right arm and right leg and became markedly comatose, the hemiplegia becoming complete on the eleventh day. On the eleventh day his temperature was 102, pulse 145 and respirations 10 per minute. Coma complete. I trephined the skull low down on the left side, opening the middle fossa. There was no extradural hemorrhage and no pulsation of the brain could be seen. The dura was incised. A contused area of the brain bulged into the wound. The center of this area was markedly ecchymotic and the surrounding cortex of the brain appeared infiltrated. A grooved director was inserted which permitted the escape of a large amount of cerebrospinal fluid, relieving the intracranial pressure, and at the end of ten minutes the brain began to pulsate vigorously. The wound was drained by strands of catgut and heavy moist dressings used to favor the relief of tension by drainage. In three days all paralysis had disappeared, the man was able to talk and the temperature dropped to 100 degrees.

I cite this case because it illustrates that in all cases of severe injury to the skull there is likely to be contusion of the brain without hemorrhage followed by inflammatory reaction which may produce fatal intracranial pressure. This may occur without demonstrable signs of injury to the head, so that in order to give these patients every possible chance for recovery the skull should be opened for the purpose of relieving tension and by providing free drainage afford the brain the greatest possible room for expansion.

Dr. T. C. Witherspoon, St. Louis—I take it for granted that the subject under discussion is injury to the brain following fracture of the skull. There are four sources of danger: First, hemorrhage; second, laceration or more extensive pulpification; third, presence of bone or foreign body in the brain or making pressure on it; fourth, sepsis. The most dangerous form of fracture as far as infection is concerned is of the base of the skull. It is certainly bad practice to irrigate the nasal cavity, as some recommend, to aid in disinfection. The water is too often the conveyor of infection. Above all things, the air of the room should be kept moist to prevent crust formation as far as possible.

As to exploration in case of hemorrhage or laceration, I feel the dura is too often opened. Adhesions are necessarily formed at the cut in the dura, and epilepsy is a possible sequence. These cases suffer from sudden movements or jars. Two cases have come under my observation in which I was sorely tempted to open the dura initially, and time has demonstrated the wisdom of not doing so. About 14 years ago a gentleman was thrown from his horse and suffered a fracture at the base of the skull. A profound coma lasted for a while, which left, on clearing, a distinct hemianopsia. At this time I favored exploration, but he fell to the care of another surgeon and I lost sight of him. Six months ago he returned to me, asking that I explore his brain to find out why he still had the hemianopsia. I advised against this, stating it was too late to accomplish anything regardless of the primary cause. In a short time he returned with a statement made out by his attorney to the effect that I would be in no way responsible for the outcome in case I operated. With him he brought some friends to urge this on me. On opening the skull we found absolutely nothing in the area of the cuneus. Evidently the original injury was a laceration deep in the basilar area.

The second case was that of a man with fractured skull due to a rock falling on his head from a height. The cutaneous wound was small, but the fracture involved the major portion of the left side of the skull. There was no paralysis, but complete aphasia; neither could he write. His understanding of written language was questionable, likewise that which he heard. The bone just above the commencement of the Sylvian fissure was most depressed. This was removed. The remaining area on the side of the head was left intact after adjusting the fragments of attached bone as best I could. A primary healing followed, and at present he can speak well enough to get about and ask for necessities. The distinct localization made it tempting to explore further in each case, but I am sure it would have been more harmful than beneficial.

DR. W. H. EARLES, *Milwaukee, Wis., closing*—This paper has been read in the hope that it may stimulate a more thorough application of the knowledge we have on this subject. The point that I especially wish to emphasize is that we do not exercise that amount of care and judgment that we should in these cases. Nowhere else in our operative work are we so tempted to hurry up the operation without satisfying ourselves as to the exact conditions present.

A few years ago I was called to treat a man who was suffering from epilepsy. He gave a history of good health until one year prior to the time that I saw him, when he fractured his skull in jumping from a fourth-story window. He told me that he had a silver plate in his skull. I did not credit the silver plate part of the history, and did an operation on the injured side of the head, when I found this plate (showing plate). His epilepsy, however, continued. I was satisfied that there was some condition present closely associated with his fits, and, after waiting two weeks, I had his head again shaved. On making the second examination I found on the opposite side of the head from that operated on, a very small scar and beneath it a depressed fracture. The scar was so small as to have escaped my attention at the time of the first operation, and the original wound had apparently been so insignificant as to have escaped the notice of the operator at the time of the primary operation. He had seen the injury on one side and performed an operation for its repair, but the injury on the other side being insignificant in appearance, did not receive apparently the attention it deserved. After the second operation the epileptic seizures discontinued, and did not reappear as long as the man was under my observation—about six months. I do not know what the final results were.

I cite this case to show the necessity of great care in examining the class of injuries referred to. I think if we will exercise what knowledge we have, and be more careful in our primary examination of the patients, we will have fewer cases of traumatic epilepsy.

Intoxication with Croton Oil.—The *Bulletin of the Societe de Pharmacie* of Bordeaux gives the details of a criminal case in which a wife killed her husband by adding two or three drops of croton oil twice daily to his food, for five months, with rare exceptions. The symptoms induced were a smarting and burning in the throat and stomach, violent vomiting after meals, daily repeated copious alvine discharges, with intense colicky pains for hours, and death at last in extreme emaciation. The medical experts were unable to detect the croton oil by any know test in the cadaver, even after the wife had confessed, but Barthe was able to identify it in spots on a cloth with which the bottle had been wiped. He also emphasizes the siccative properties of croton oil. The stomach and small intestine showed a number of superficial erosions and hemorrhagic dots, the organs much congested. No characteristic lesions were noted in the large intestine or other organs; the kidney and liver were apparently normal, as also the brain, etc.

CLINICAL DIAGNOSIS OF INTESTINAL PARASITES.*

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In diagnosing intestinal parasites, we may use various methods, but the best method is undoubtedly that of a microscopic examination of the feces.

DIAGNOSIS BY SYMPTOMS.

The practitioner who relies on symptoms alone for his diagnosis will undoubtedly often successfully recognize the true nature of the trouble, especially in severe infections. For instance, when we are in the infected area of hookworm disease and meet a typical clay-eater we note a complex of symptoms which is quite characteristic, and in most cases of this kind a microscopic examination seems unnecessary. In numerous medium cases and in practically all light cases of this disease, however, a diagnosis on symptoms alone is uncertain unless we find severe cases, such as clay-eaters, in the same family. Outside of the infected area, probably few physicians would care to risk a definite diagnosis of this disease on symptoms alone even in the severe cases, while in medium and light cases it would be almost folly to do so.

BLOOD COUNTS.

Blood examination has become almost a matter of routine in the better hospitals and also in the private practice of many physicians, and in all such examinations we should bear in mind the important fact that an increased eosinophilia is an indication of possible infection with animal parasites. Hence, when an increased eosinophilia is noticed, we should immediately make a microscopic examination of the feces for eggs or embryos of parasites, and if these are not found we should consider the possibility of trichinosis, especially in obscure typhoid-like cases.

GROSS EXAMINATION OF THE FECES.

Physicians in general appreciate the importance of a gross examination of the feces of infants, but less attention is given to an examination of the stools of adults. In some cases a gross examination of the stool will reveal segments of a tapeworm, or in some cases of nematode infection the adult worms may be found. This, it seems, is more likely to occur after a patient has taken calomel or a small dose of some anthelmintic or after food has been withheld for twenty-four to forty-eight hours. In the first stage of trichinosis, especially where the diarrhea is severe, as in children, the adult trichinæ may sometimes be found. In hunting for these trichinæ the stools should be diluted with warm water and examined in a flat glass dish held over a black background.

The color of the stools is occasionally suggestive in case of infection with blood-sucking parasites, such as hookworms. The hookworm stool (such as usually seen in very severe cases) is reddish brown in color.

BLOTTING PAPER TEST.

In hookworm infections a very simple test may be made with blotting paper or even with an ordinary newspaper. Several ounces of the stool should be wrapped up in paper and allowed to stand for a few hours. In severe cases and in many median cases it will be noticed that a distinct reddish-brown stain is formed on the paper. In this test, however, there is an error of 30 per cent. or more.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

Odor and Litmus Test.—While the odor of feces from parasitic infections is sometimes offensive, I have not been able to discover anything sufficiently characteristic about it to attract special attention. The litmus paper test is of no value, so far as my observations go.

MICROSCOPIC EXAMINATION OF FECES.

I believe that a routine microscopic examination of feces should be made in all hospital cases and also in all private cases so far as practical. The results which the Zoological Division of the Hygienic Laboratory has recently obtained in examining the patients at the Government Hospital for the Insane amply demonstrated the value of such work, for we found that 3 per cent. of the first 500 cases examined showed hookworm infection.

There seems to be an impression that fecal examination involves very disagreeable work. While it must be admitted that some stools are offensive, I would personally much prefer to make a feces examination than a sputum examination, for in working with feces one is much less likely to experience that nauseating sensation so commonly resulting from an examination of sputa.

TECHNIC.

The technic involved is exceedingly simple, since it is not necessary to stain the preparation. A portion of the feces, say 1 to 5 grams, is taken from the stool, wrapped up in a piece of paper and taken to the laboratory. Or, if it is desired to test for protozoa as well as for worms, it is better to place the specimen in a bottle so that the material will not dry. To avoid errors in interpretation it is well to make the examination as promptly as possible, although an experienced operator may examine the specimen even if it is a week or so old. In examining old specimens, however, it must be recalled that the older the specimen the more likely one is to fail to recognize protozoan infections.

An elaborate series of instruments may be used in preparing the slides if desired, or, if instruments are not at hand, a match will suffice.

For slides I prefer the large 2 by 3-inch, such as are used for large sections or for trichina inspection, rather than the 1 by 3-inch slide generally used in bacteriologic work. These larger slides are much more easily handled than are the smaller sizes. Having thoroughly cleaned the slide in order to remove any eggs which may have clung to it from some former examination, a drop of water is placed on it; next take a minute portion of feces on the end of a match or a glass rod and thoroughly mix it with the water so that the resulting mixture is not too thick; add more water if necessary. Next cover the mixture with a cover glass (square cover glass preferred) and the preparation is ready for examination. As many as two to four cover glasses may be conveniently placed on one slide and at least ten cover-glass preparations should be examined before a negative opinion is given.

In the work several very simple precautions are to be observed, namely, the specimen and the preparations are to be kept protected from flies, the hands are to be immediately cleaned if accidentally soiled with the feces, especially if nothing is known regarding the condition of the patient, and all glassware is to be thoroughly cleaned (hot water or hot water and soap). In case of the presence of *Tænia solium* in man, double precautions are to be observed, as the egg is infectious for man. In case of examining feces from dogs, the possibility of the presence of *Tænia echinococcus* and its transmissibility to man should be held in mind.

The biologic principle on which fecal examination rests is that the eggs of different animals are more or less characteristic. Accordingly, to properly carry out the examination one must become familiar with the eggs and embryos of different species, also with the form of certain plant cells and fibers which might be mistaken by the uninitiated for eggs or embryos of parasitic worms.

Not every egg found in the feces indicates an infection of the intestinal tract. In the case of infection with liverflukes, for instance, the eggs are discharged in the stools, and some of these forms resemble more or less closely the eggs of certain intestinal parasites. In lungfluke infection the eggs of *Paragonimus* may be found both in the sputum and in the feces. In bloodfluke infection the eggs of *Schistosoma* may be found both in the feces and in the urine. In certain cases, therefore, it is necessary to examine either the sputum or the urine in addition to the examination of the feces.

For illustrations of the eggs most commonly found, I refer you to any work on clinical diagnosis or to Bulletin 10, Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.

A CONTRIBUTION TO THE STUDY OF THE SUMMER DIARRHEAS OF INFANCY.*

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It is with great hesitancy that any attempt is made in this paper to enter a field that has been so thoroughly investigated during recent years as that embraced in the title of "The Summer Diarrheas of Infancy." The zeal with which these intestinal disorders of children have been studied lately is in direct ratio with their neglect by early medical writers. Although, as Dr. Booker[1] has shown, there are occasional references among the ancients to diarrheal troubles in infants in the summer months, there is no clear history of these diseases prior to their appearance among the colonists in this country. As he suggests, the importance of human life in this newly-settled land may have called sharp attention to a malady which was each summer carrying away the children of the settlers in large numbers. The malady, called the "dread of parents and the opprobrium of physicians," was thought at first peculiar to America. The yearly outbreaks in the larger towns scattered along the Atlantic coast were recognized and described under various names by local physicians, but the first adequate description of these maladies seems to have been made in 1773 by Dr. Benjamin Rush.

Knowledge of these disorders spread gradually in this country and in Europe, and it was not until the early part of the last century that their great importance was recognized. As is the case with other diseases, the clinical descriptions of many of these early observers leave but little to be added by their successors. They ascribed the causes of the disorders to various conditions, some of which will pass muster to-day, to the character of the atmosphere, cold, moist or hot, to direful miasms, to overcrowding, to improper food, to teething, to faulty action of the liver, and so on. They recognized the epidemic character of the disease and the lines of treatment adopted were in the main those now followed. Food was restricted, prompt purgation resorted to, opium was used in moderation, and the advantage of removing the little patients from crowded districts to the country was recognized. With the advent of the science of bacteriology, new zest has been added to the study of these complaints. Then, for the first time, there seemed possible a rational explanation of the infectious nature of the affection. The intestinal tract of the healthy infant was found to swarm with bacteria of many varieties.

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It would be needless to even mention the host of workers in this field, or the names of the numerous bacterial forms isolated. Perhaps the most authoritative work on the subject has been done by Escherich of Vienna, formerly of Gratz, who noted the predominance of *B. lactis aerogenes* in the upper bowel of the infant, and of *B. coli communis* in the large intestine, during health. In diseased conditions the differences between the flora in the upper and lower bowels are less marked. In addition to other varieties found in the intestinal tract, including the interesting *B. acidofilus* of Moro and Finkelstein, several forms known to be pathogenic for man have been isolated from the stools of infants suffering from diarrhea. Thus, among others, the pathogenic cocci, *B. proteus vulgaris, B. pyocyaneus* and virulent forms of the colon bacillus have been described. No single pathogenic organism, however, has been found constantly in these diarrheal conditions, and the conclusions of Dr. Booker[2] perhaps voice the present position of the profession, that "No single organism is found to be the specific exciter of the summer diarrheas of infants."

Notwithstanding these comparatively negative findings, it is believed that there is clinical evidence in favor of the specific nature of these affections. The epidemic character of the disease in our crowded cities during the summer months, its occasional propagation in hospitals and asylums from patient to patient, and the nature of the illness itself, all suggest that the exciting cause of the disorder is an infectious agent not normally present in the body. The factors predisposing to this infection have long been recognized, and experience only tends to emphasize their importance. Thus the disease is much more prevalent among infants of weakened constitutions living amid unhygienic surroundings and nourished by insufficient or improper food. The high temperature during our summer months provides most favorable conditions for the rapid proliferation of bacteria in food products, especially in milk, and the large residue of undigested milk which remains in the infant's intestinal tract as a result of immoderate feeding, or of a weakened absorptive power, forms an ideal pabulum for the growth of bacteria and the formation of deleterious products. So frequently are these conditions incident to an attack of summer diarrhea that many, including Czerny of Breslau, consider improper feeding the more important factor in its production, and the infective element to be of comparatively less moment. Certain it is that the mortality in intestinal diseases of infants is directly influenced by the resistance of the patient, which is in turn dependent upon the condition of the digestive apparatus.

The effort to isolate a single organism which could be shown to be the cause of a large group of these cases of summer diarrhea, has been unsuccessful, because of the difficulty in the separation of such an organism, if present, from the great numbers of bacteria in the intestinal contents. Last summer in the laboratory of the Thomas Wilson Sanitarium,[3] assisted by a grant from the Rockefeller Institute, two investigators, C. W. Duval and V. H. Bassett, succeeded in isolating *B. dysenteriæ* (Shiga) from the stools of forty-two infants suffering with diarrhea. The importance of this finding is evident, as it brings a series of diarrheal cases in young children into relationship with an organism that is the proven exciting cause of certain varieties of severe intestinal disease in adults. It is unnecessary to do more than refer to the history of the organism. It will be remembered that it was first isolated by Shiga[4] in Japan, in 1897, from the stools of patients suffering from epidemic dysentery. In 1900 Flexner[5] discovered the same organism to be the cause of many cases of epidemic dysentery among our soldiers in the Philippines. Soon after Kruse,[6] in Germany, found the same bacillus in the dejecta of patients suffering from so-called "asylum dysentery." It has since been successfully isolated by Vetter and Duval[7] in epidemics of dysentery in this country, and has also been found in diarrheal cases in China, in Constantinople, and in several other sections of Europe.[8]

At the Thomas Wilson Sanitarium the stools of about fifty-three patients, most of them under 1 year of age, were examined bacteriologically, and from forty-two the dysentery bacillus was isolated. Early in the summer those cases were selected in which the stools contained considerable mucus and blood. These were regarded as especially "favorable," that is, that from them the organism could be obtained in largest numbers. Later the stools of twenty-five consecutive infants were carefully plated, and in nineteen instances *B. dysenteriæ* was found. All these babies exhibited some form of intestinal disorder, but the stools of many of the series were largely fecal, and in these cases the organism was present in comparatively small numbers, and was more difficult to isolate. The importance of determining the presence or absence of the bacillus in normal stools was recognized, and the discharges of twenty-five babies, ranging in age from 7 weeks to 2 years, suffering from no intestinal derangement, were subjected to painstaking examination. In none of these cases was the Shiga bacillus found.

A detailed account of the methods employed in isolating the organism will shortly appear,[9] and will be only briefly referred to here. The technic was essentially that used by Dr. Flexner in the Philippines, though several important modifications employed first by Vetter and Duval[7] in their work on adult dysentery, were of great assistance. The stool of the infant to be investigated was collected on sterile gauze and taken immediately after passage to the laboratory. Numerous plate cultures in acid agar-agar were made, choosing for plating, when possible, bloody or muco-purulent portions. After incubation for twenty-four hours, the superficial colonies were marked off and the plates again placed in the thermostat for twenty-four hours, when the new superficial colonies were carefully examined. Duval and Vetter found in their studies that the dysentery bacilli grow out on plates less rapidly than do colon organisms, and that by thus marking the plates one is enabled to select for study the colonies developing more slowly, and thus the ubiquitous colon bacillus could be avoided. The colonies which seemed morphologically favorable after this second incubation were transplanted to glucose agar and all gas-forming organisms discarded. The non-gas-forming bacilli were studied culturally on the various media, and their agglutination reaction tested with serum from the same patient, the sera from numerous other patients, and with antidysenteric serum furnished through the kindness of Dr. Gay. This agglutinating action of the blood serum for the specific organism was a great assistance in the successful isolation, as it proved to be to Shiga and Flexner, and to all subsequent investigators. The technic of making this test with the dysentery bacillus requires more than usual skill, and thus far wider variations in the amount of agglutinin in the sera from various patients seem to pertain than is the case in typhoid fever. Our experience would indicate that in nearly all cases the serum has some definite agglutinating power for the specific organism if the two are brought together under the most favorable conditions. The serum from immunized horses in dilutions from 1-100 to 1-1,000, agglutinated the organisms isolated from all our forty-two cases, as well as various strains of the dysentery bacillus sent from abroad, while it was quite inert in low dilutions against the typhoid bacillus. Moreover, the blood of our patients agglutinated the organisms isolated at the sanitarium, as well as those obtained from cases of epidemic dysentery in Japan, the Philippines, Germany and in this country, in dilutions varying from 1-16, the least active, to 1-1,000, when cultures of typhoid or colon bacilli tested synchronously were negative. The agglutination reactions were made in drop slides and observed under the microscope. Lenz,[10] in the last few months, has advocated the macroscopic test-tube reaction as being more reliable, and since last summer this method has been used in testing many of our isolations. With some minor differences, the two methods seem to fairly correspond. It is difficult at present to explain many apparent irregularities in the agglutination reaction with the dysentery bacillus, and much further study is necessary before hard and fast lines can be drawn as to the time in which a reaction must take place to be considered positive, and also as to the minimum dilution of the serum to be allowed. These steps toward a recognized technic were gradually taken in the study of the Widal reaction with the typhoid bacillus. However, the Shiga bacillus seems to present more differences in the importance and rapidity with which the various isolations clump than does the typhoid bacillus. In no instance during the summer did normal blood agglutinate any of the dysentery bacilli.

It is too early yet to speak positively of the clinical value of the agglutination reaction. Of thirteen cases tested during the first week of illness, ten gave positive, and three negative, reactions. One case reacted on the second day. Usually, however, reaction was more marked later in the disease. In the chronic cases the blood may remain positive for weeks or months. It is in cases of this nature that the blood tests may prove useful. By this means in a number of our series presenting the symptoms of chronic intestinal disorder, a diagnosis was made on the basis of a positive blood reaction, and a dysentery bacillus afterward isolated from the stools. In several tested cases where the bacteriologic examination of the stools was not possible or convenient, a diagnosis was ventured because of an undoubted agglutinating reaction. It is hoped that when its limitations are understood this blood reaction will prove of assistance to the clinician.

The studies conducted by Duval and Bassett have resulted in establishing the fact that there was present in the intestinal tract of a large number of infants suffering from diarrheal disorders, a bacillus identical with the *B. dysenteriæ* (Shiga), hitherto associated only with the dysentery of adults. They have found also that this organism was pathogenic for animals; that it was present in largest numbers in the deeper layers of the intestine, as shown by scraping the mucosa at autopsy; and that the number of bacilli in the stools was in proportion to the acuteness and severity of the symptoms. The organisms isolated were agglutinated by antidysenteric serum and by the blood of infected patients, never by the blood of those ill with other diseases. They were unable to find the Shiga bacillus in the discharges of healthy infants. In short, the evidence presented by Shiga, Flexner and others, to establish the etiology of dysentery in adults is at hand to show that the dysentery bacillus is also the causal factor in certain diarrheal diseases among children.

It now remains to consider the clinical aspect of this series of cases in order to determine, if possible, whether they belong to an isolated group, or whether they represent in symptomatology and pathology the maladies called by the descriptive epithet, "The Summer Diarrheas of Infants."

TIME OF ADMISSION.

The 42 cases of our series were admitted to the sanitarium between June 13 and August 21 of last summer, 12 being received in June, 25 in July and 5 in August.

AGE.

The age of the little patients varied between 7 weeks and 4 years. The majority of them were under 1 year of age. They may be arranged according to age in the following periods of six months each:

Under 6 months	13
Between 6 months and 12 months	17
Between 12 months and 18 months	8
Between 18 months and 24 months	3
Over 2 years	1

The interest of this classification is that our patients, in regard to their ages, correspond closely to a period in infancy long known to be most susceptible to summer diarrhea.

SEX AND RACE.

The cases were about equally divided between the sexes. But two colored infants are included in our series, as the accommodations for these patients are limited.

HISTORY OF ILLNESS.

Unfortunately, because of the distance of the sanitarium from the city, the patients usually came under our observation after their initial symptoms. The mothers, as a rule, however, gave us a fairly definite history of onset, the record often being that the baby, after a day or two of languor, was suddenly seized with diarrhea, usually preceded or followed by vomiting. At the same time a rise in temperature was noted. Subsequently there was increased constitutional disturbance indicated by a loss of appetite, malaise and restlessness. The stools at onset, although increased in number and often fluid in consistency, were fecal in character. Soon, however, except in the very mild attacks, the fecal odor and appearance were lost, and the discharges were composed largely of greenish mucus, and not infrequently tinged with blood. During the height of the illness the temperature usually continued elevated, and nausea and vomiting, even after a reduced diet, were common. It was at this period that the Shiga bacilli were obtained in large numbers in the stools. These acute attacks varied greatly in severity. In some cases the constitutional disturbance was slight and the stools were little affected; on the other hand, several of our patients presented early symptoms of profound intoxication, evinced by convulsive spasms, excessive nausea and vomiting, and increased languor, ending in coma. A large number of the cases, however, exhibited quite a different picture. After an acute onset, instead of toxemia ending fatally or in a prompt convalescence, the baby showed symptoms indicating a more localized affection of the intestine. In these instances, which included more than half of our series, after variable periods the stools became mucopurulent, and contained often an increased amount of blood, some of it bright red in color. The temperature showed a daily, usually an evening, rise. The appetite remained poor, and vomiting was not infrequent. There was evidence of considerable pain in the lower abdomen; tenesmus was marked. These cases often became chronic and lasted for weeks. They were more numerous during the latter part of the summer, and were less amenable to treatment. Often, despite many carefully prepared diets, there was progressive loss of weight, increase in anemia, and a fatal termination from exhaustion. In several instances in our series the specific infection was superimposed on infants which for months had been suffering from malnutrition and chronic intestinal indigestion. Of several of the clinical features a few words may be added.

TEMPERATURE.

The temperature in the series of cases varied from 95 F. to 105 F. As has been mentioned, daily rises in temperature were often noted. The degree of bodily heat was of clinical assistance only when considered with other signs and symptoms, as a drop to normal or subnormal temperature not infrequently was an indication of collapse, and the illness of several of our patients manifesting constitutional disturbances, ran an almost afebrile course.

GASTROINTESTINAL PAIN.

Gastrocolic was rarely noticed while at the sanitarium, but was present, according to the description of the mother, in a few cases at onset. A large number of the cases of long duration exhibited rectal tenesmus.

NUMBER AND CHARACTER OF THE STOOLS.

The stools varied in number from one to thirty in twenty-four hours. They usually became most frequent in the first three days after onset. The discharges presented also wide differences in character. Some were distinctly fecal, but semi-fluid or fluid in consistency. In the cases showing symptoms of indigestion, the stools were often pasty in character and gray in color. Hard masses would alternate with softer material. The element that was almost constantly present was mucus, either as a firm, translucent, gelatinous substance, or as more fluid, viscid, or stringy material, usually greenish in color. Marked inflammatory lesions of the lower bowel were indicated by the muco-purulent or purulent character of the stool. The amount of blood passed varied from a slight tinge or fleck to dark brown or bright red masses in fairly large quantities. Under the microscope many epithelial cells, varying in number of white and red corpuscles, bacteria, mucous strands and undigested food residue, fat globules and casein, composed the more constant elements.

COMPLICATIONS.

Complications early in the course of the illness were comparatively infrequent. Death in several instances was preceded by the appearance of livid erythematous blotches over various parts of the body. Terminal bronchopneumonia was not uncommon. In two instances there was concurrent lobar pneumonia, and in two other cases acute parenchymatous nephritis developed. Occasional edema of the extremities was noticed not associated with alterations of the kidneys, and in several instances stiffness of the neck and extremities would have suggested meningitis had it not passed away after a few hours.

ILLUSTRATIVE CASES.

A résumé of each of the histories of our series would hardly be profitable, as in the main they present very similar and familiar features. From a large number, however, several may be selected as representing the more important clinical groups. The following is an instance of a mild form of diarrhea:

Case 1.—A child 18 months old, fed at the table, became cross and irritable. A few days afterward its stools increased to from seven to ten a day and were described by the mother as "green and slimy." On admission to the sanitarium they were found to consist largely of green mucus, with numerous soft, white lumps. They never contained any blood. There was occasional vomiting. Physical examination, negative. There was no marked prostration. On a regulated diet the discharges became homogeneous in form, the mucus disappeared, and the child soon completely recovered.

A much severer type of an acute case with complication is illustrated by the following instance:

Case 2.—An infant 8 months old, fed on condensed milk and previously well, was suddenly seized with moderate diarrhea. For several days the stools were not more than six in twenty-four hours, but on the day before admission they increased to twenty, and were fluid, with considerable mucus, but no blood. The general condition of the baby became markedly worse. He was feverish, restless and had several fainting spells. On admission the child was in collapse. The rectal temperature was 105 F., pulse 180, face pale, and extremities cold. The eyes were sunken and the abdomen scaphoid. Physical examination of the chest, negative. There was some response to stimulation, and for two days his condition improved. On the third day, however, albumin in large quantities appeared in the urine, with many granular casts and pus cells. The tissues about the neck and chest became edematous; the child gradually became more listless; coma ensued, ending in death three days after the renal involvement. At autopsy the intestines were little altered. There was no distension. The mucosa was pale. Peyer's patches were moderately enlarged and somewhat injected, as were also the solitary follicles. The mesenteric glands, particularly those draining the sigmoid flexure and rectum, were somewhat enlarged. There was no lesion of the intestinal mucosa. The kidneys were the large and white kidneys, indicating acute parenchymatous nephritis.

In the next case, although not unlike clinically, there was evidence of a destructive lesion of the lower bowel.

Case 3.—An infant of 5 months, fed for four months on condensed milk, began two weeks before admission to be fretful and to vomit occasionally. Soon after the stools increased in frequency and were described as "yellowish and slimy." No blood was noticed. The child was found, on examination, to be rickety and anemic, and did not improve after admission. There was a moderate fever. The stools were six to seven a day, and consisted of thick, viscid mucus and contained considerable blood and pus. There was some rectal tenesmus. The baby gradually lost weight and strength, the blood in the stools increased, and death ensued about five weeks after the onset of acute symptoms. At autopsy numerous small hemorrhages were found scattered through the ileum; the mucosa of the entire colon was thickened and covered with bloody mucus; the solitary follicles were much enlarged and the seat of numerous small ulcerations. The mesenteric glands were everywhere swollen and red.

One other history will be cited as illustrative of a case of long-standing malnutrition.

Case 4.—An infant was 7½ months of age, a twin and delicate from birth, breast-fed for two months, but during the remaining five months the diet has been variously modified. For most of this time the stools varied from two to eight in twenty-four hours and frequently contained mucus. There was little or no gain in weight. Frequent colic; occasional vomiting. The abdomen was usually distended. Two weeks before admission these symptoms became somewhat aggravated. The child was found on examination to be markedly rickety, with general glandular enlargement. After admission its general condition remained about the same. For days at a time the stools would become more homogeneous and firm, only to show a return of mucus and pus after a short period, despite careful feeding and rectal irrigations. There was never any blood. The temperature was but slightly elevated. The infant remained with us until the end of the season, and was discharged unimproved.

What has been said of the clinical history of our forty-two patients and the illustrative cases cited, are sufficient, certainly, to warrant the assertion that, so far as can be told at the bedside and in the autopsy room, we were dealing last summer with no unusual form of intestinal disease, but with the common varieties of summer diarrhea. Our cases fall naturally into two or three large groups which have long been recognized, namely: into those of an acute dyspeptic or fomental diarrhea (gastrointestinal catarrh) of varying degrees of severity, in which the toxic symptoms were prominent—twelve cases; into those of colitis, marked by the definite inflammatory lesions of the intestinal mucosa—twenty-six cases; and again into at least four instances which were primarily malnutrition, marasmus, or chronic indigestion, but in addition to which the element of infection has been added. It is well understood that these divisions of intestinal diseases do not represent definite clinical entities, but that one form of illness may readily pass into another; that the cases of ileocolitis usually begin with symptoms of dyspeptic diarrhea, and that ill-nourished infants are particularly prone to either form of disorder. Of the most fulminating variety of the toxic intestinal diseases, namely, cholera infantum, we had no example in our series. It is suggestive, however, that in the stool of an especially acute case, one thought at first to be cholera infantum by the attending physician, the Shiga bacilli were found in greatest numbers. It will be reiteration to go over the histories of the infants treated in previous years at the sanitarium. In the summer of 1901 nearly five hundred intestinal cases were admitted. These, too, can be roughly divided into the groups just indicated. During that season we were able to obtain more than twenty autopsies. The findings at the postmortem table substantiated those of the cases of our present series which came to autopsy. The intestines of infants observed two years ago suffering from acute toxic affection likewise presented little pathologic alteration. The mucosa was pale and thin, the lymphatic elements in the intestinal wall moderately enlarged, and the mesenteric glands swollen. On the other hand, in a second group of cases the lower bowel was extensively involved, the mucosa being thickened, and often the seat of more or less extensive ulceration, the ulcers beginning usually at the summit of the swollen solitary follicles. The mesenteric glands were hypertrophied. It is an interesting fact that neither in our autopsy findings of last summer nor in the postmortem examinations of the larger series of 1901, was any false membrane found lining the intestines, as is so frequently described in the acute epidemic dysentery of adults.

LEUCOCYTE COUNT.

During that summer the leucocytes in a large number of intestinal cases were examined by Dr. Warfield and the writer.[11] A leucocytosis was found, but the number of white cells varied within such wide limits, even in the mild forms, that a high or low count could not be regarded as of diagnostic value. The differential count, however, showed that while there was no change in the relative ratio of the white cells in the normal infant, in the simple diarrheas, or in malnutrition, that as the case became more severe in type there was a progressive increase in the polymorphonuclear neutrophilic cells and a decrease in the small mononuclear variety, and that this polymorphonuclear leucocytosis took place both in the case of acute intestinal poisoning and in the more severe forms of ileocolitis. The counts made last summer in the series of cases under consideration confirm these results and add some support to the contention that similar varieties of intestinal derangement were under observation.

TREATMENT.

The treatment pursued at the sanitarium followed the usual lines, and will be but briefly referred to. In the acute cases, milk was withheld and sterile water with thin broths, or plain water with a little egg albumin substituted. Whey or whey-cream mixture was found a useful intermediary step to the gradual return to a milk diet. With the chronic cases, milk, beginning with high dilutions, occasionally predigested, often with a cereal water as a diluent, formed the chief reliance. Colon irrigations were frequently given and gastric lavage as the symptoms indicated. Drugs were sparingly used. An initial purge of calomel or castor oil was administered when the baby came early under observation. Various astringent preparations, tonics and opiates were occasionally employed. Injections of salt solutions under the skin were less frequently resorted to than in former years, as it is felt that this procedure has been somewhat over extolled. As stimulants, strychnin, digitalin, alcohol, and atropin were found serviceable in the order named. In the giving of stimulants we were greatly helped by the introduction by Dr. H. W. Cook,[12] clinical assistant, of a modification of the Riva-Rocci sphygmomanometer, by which the blood pressure of the little patients was rapidly recorded. With the additional aid of this instrument at the bedside, Dr. Cook shows that the actual vitality of the infant can be more accurately determined than by the skilled finger on the pulse, and the kind and amount of stimulant suited to the particular need of the hour. Late in the summer we were supplied by Dr. Flexner with an anti-dysenteric serum found protective to laboratory animals. Unfortunately, at this time there were no acute cases at the sanitarium. Several infants ill with ileocolitis, from whose stools the Shiga bacillus had been isolated, were injected hypodermically with 5-10 c.c. of this serum twice a day. No change could be noted in the patient's condition. No untoward effects followed the serum treatment, and it is hoped that more powerful serum in perhaps larger doses will prove to be of therapeutic value, particularly in the early cases.[13]

Enough has been said to make probable the assertion that the infant population of Baltimore during the summer of 1902 suffered from no unusual scourge, but rather was subjected to the accustomed epidemic of diarrheal diseases regularly recurrent during the warm weather, and that typical instances of these disorders were under treatment at the Thomas Wilson Sanitarium. That these infants were not the victims of an infection local to the sanitarium is shown by the fact that they were admitted from all sections of the city already ill. Two cases were from more distant parts of the state. Moreover, since the results of the investigation by Duval and

Bassett have been known, other workers have found the dysentery bacilli in the stools of babies suffering from diarrhea in other localities; thus, Zahorsky,[14] in St. Louis, and Park and Dunham, in a small epidemic at Seal Harbor, Maine, have reported such cases. The extent of epidemics in Japan and in the Philippines indicates that the organism is capable of very wide distribution. Only future research can determine the geographical or climatic limitations of the infection, but it would appear that a large group of the summer diarrheas of infancy are associated with bacilli identical with, or closely related to, *B. dysenteriæ* (Shiga). Recent work by Lentz,[10] His and Russell,[15] Park,[15] and others indicate that minor differences may exist in the cultural properties and startling variations are pointed out in the agglutination reaction of the bacilli isolated from different sources. Thus Park finds that in indol and acid productions, as well as in agglutination reactions, the Japan and New Haven cultures are separated from the Manila, Baltimore, New York and Seal Harbor cultures. Whether, in the search for the cause both of dysentery in adults and of summer diarrhea in infancy, one has to deal with a group of very closely related organisms, or, as is more probable, with slightly different strains of the same bacillus comparable to the differences that can be shown in the various typhoid and colon cultures, is a most interesting and important problem for the bacteriologist to determine.

CLINICAL SIGNIFICANCE OF THE FINDING.

This bacteriologic finding in connection with the summer diarrheas of infancy is of no less interest to the clinician, as it spurs him on to attack with renewed vigor the old problems of prophylactic treatment. Professor Koch,[16] in his notable address two years ago in London, showed the blunder of attempting to treat pestilences according to a general scheme. He said: "Every disease must be treated according to its own individuality, and the measures to be taken against it must be accurately adapted to its specific nature, to its etiology." If the investigations of last summer are substantiated, effort may be directed for the first time against a recognized foe. Questions, then, of the utmost importance can be propounded with some confidence that they will be accurately answered.

METHOD OF PROPAGATION.

One of the first of these problems is to determine the means by which the infectious agent reaches the infant. Although the number of cases in our series is too small to warrant positive assertions, there is some rather suggestive data on this point in the histories of our patients. It can hardly be doubted that the disorders being considered primarily affect the gastrointestinal tract, and therefore that the mouth is the portal of entry, and that the source of infection takes place in the great majority of cases through food or drink, that is, in young infants, through contaminated milk or water. Condition of the milk supplied to the poor from the small stores in our large cities is notoriously bad. During the summer of 1901 Bassett and the writer[17] examined a large number of samples of milk supplied the babies in Baltimore suffering from summer complaint before their admission to the sanitarium. This milk was found to have an average germ content of over four million to 1 c.c., and several samples contained ten to twenty million bacteria in each cubic centimeter. Last summer Schorer repeated and verified this work. He was able to show a progressive increase in bacteria and in diluents in the milk during each stage of its handling from the farmer through various dealers to the baby. Because the milk is so good a culture medium in the warm weather without proper refrigeration, a small initial contamination is sufficient to render it in a few hours unfit for infant feeding.

For the explanation of the sudden outbreaks of this illness at the same time in different sections of the community, one is tempted to turn to a general source of infection. The dysentery organism is related biologically to the colon and typhoid bacillus which are usually conveyed to man through water.

With this thought in mind, an effort was made to find out the character of the water supplied to our patients. The mothers were asked specifically whether the water used in preparing the nourishments, and what is just as important, that supplied to the infants between feedings, was boiled. Concerning but twenty-eight out of the forty-two babies was fairly reliable information obtained as to both the milk and the water used. In twenty-six of these cases unboiled city water was given the babies, either with their nourishment or separately, and in but two instances was all the water supplied boiled. Of particular interest are four infants ill with this specific diarrhea, who were exclusively breast-fed, but to whom unboiled water was given between nursings. Four other babies whose only food was condensed milk, were likewise given unboiled water between feedings. These cases are too few to admit of generalization, but they do suggest that the dysentery, like the typhoid bacillus, may be harbored in the public waters. Indeed, it is possible that infection of the milk with the organism is brought about through dilution with impure water. It is possible to conceive that the disease may be propagated in other ways. Outbreaks of this form of summer diarrhea in asylums and hospitals, where sterilized milk and boiled water are used, are probably brought about by the spread of the disease from patient to patient, through carelessness on the part of attendants. Another source of danger is insects, particularly the common house fly. In the only case in our series contracted at the sanitarium infection was probably conveyed through flies. The child concerned was fed exclusively on pasteurized milk, and given only sterilized water, but there was no means at hand to adequately protect him from the swarms of flies, which may easily have carried the infective agent from a napkin to his hands or feeding bottle. It is difficult to account for the comparative freedom of infants from this form of illness during cold weather and its regular return as a widespread epidemic in summer. Shiga has pointed out that the dysentery bacillus is kept alive in Japan by the occasional sporadic cases which occur during the winter in that country. Evidence suggesting a similar condition among infants in America is accumulating. Thus, in four children brought to the Johns Hopkins Hospital because of diarrhea during January, February and March of this year, the Shiga bacillus was isolated by Bassett, and Ford has lately found the same organism in the stools of a man suffering from a mild gastro-enteritis. By means of such sporadic cases, and because this bacillus may be harbored for months in small numbers in the intestines of chronic cases, it is not destroyed during the winter, but is at hand each summer to rapidly proliferate under favorable conditions. It has been repeatedly emphasized that infants suffering from marasmus, less severe forms of malnutrition, and from other chronic ailments, are its readiest victims.

The name, "dysenteria infantum," or "infantile dysentery," is suggested for the infection under consideration. This designation would distinguish these cases from other forms of intestinal disorder, and also from the specific dysentery of adults, which, although having the same etiology, seems to present clinical and pathologic differences.

From the foregoing discussion, it may be fairly concluded that:

1. The diarrheal disorders of a large series of children treated in the Thomas Wilson Sanitarium during the summer of 1902 were produced by a bacillus thought to be identical with the *B. dysenteriæ* (Shiga).

2. The cases in this series presented the clinical and pathologic features of the several forms of the summer diarrheas of infancy.

3. There is good reason for the confidence that a proportion, and probably a large one, of the so-called summer diarrheas of infancy is caused by the *B. dysenteriæ* (Shiga).

4. A confirmation of the work of Duval and Bassett by establishing the etiology of this yearly epidemic among infants, will make possible the use of more intelligent measures to control and suppress it.

5. More success can be expected from prophylactic measures and from medicinal and serum therapy than ever before.

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17. Maryland Medical Journal, June, 1902.

OTITIS MEDIA IN INFANCY.

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Many papers have appeared on this subject within the last few years. Nevertheless, my experience leads me to believe that the profession, as a whole, does not realize as it should the frequency of this condition in infancy and its importance in differential diagnosis. I have learned to look for it in all cases of doubtful diagnosis and to consider it as a possible cause for any symptoms not otherwise easily explainable in the course of other diseases. No physical examination in infancy in which other definite signs sufficient to account for the symptoms are not found should be considered complete without an examination of the ears. Many awkward mistakes would also be avoided if they are examined even when the signs of other conditions are present.

Many physicians seem to think that inflammation of the middle ear is always associated with earache, and hence if there are no evidences of earache they do not consider the ears at all. This view is certainly not justified. Many infants with acute inflammation of the middle ear show no signs of pain at any time, and many others who evidently have pain somewhere show nothing by their actions which will direct the attention of the physician to the ear. It is a common impression that putting the hand to the ear means earache. It sometimes does, but more often does not. All sick babies are very likely to wave their arms about, grab at their ears and pull their hair. Apparent tenderness on pressure over the mastoid is another most unreliable guide. Tenderness over the mastoid is unusual anyway, in simple acute inflammation of the middle ear, and, on the other hand, most sick babies will cry if firm pressure is made on any part of their body. The only way to determine satisfactorily whether or not there is inflammation of the middle ear is to examine the ear with a speculum; all other methods of examination are incomplete and necessarily misleading. The examination of an infant's ears is not a simple matter and requires considerable experience. The results, however, are well worth the time required to master the technic. A smaller speculum than comes with most sets is necessary.

Acute inflammation of the middle ear is usually, but not always, associated with fever, which may be high. It causes many reflex symptoms, which are sometimes quite severe, convulsions not being very uncommon. These reflex symptoms very often attract the attention from the real seat of the trouble to some other part of the body. Meningitis, pneumonia, gastritis, worms, dentition and, in fact, almost every acute disease but the right one is suspected.

An acute primary inflammation of the middle ear is, however, probably more often mistaken for pneumonia than for any other condition. The following case is an example. It also shows very well the results of treatment.

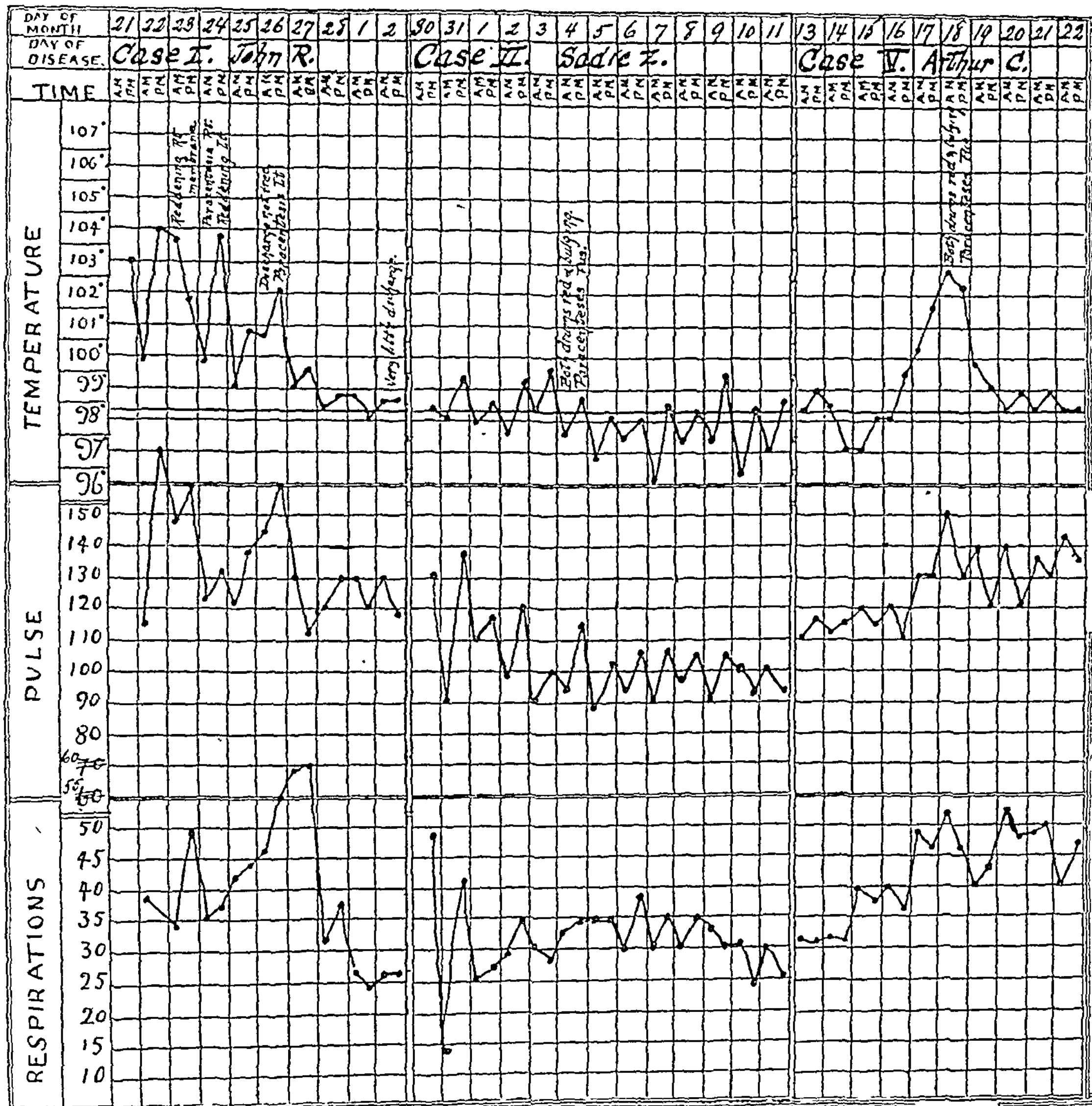
Case 1.—John R., 6 months old, was taken suddenly sick February 18 with fever, cough and difficulty in breathing. He lost his appetite, but showed no other symptoms of gastroenteric disturbance. He was taken to a physician February 21, who found the temperature 104.2 F., the pulse 160 and the respiration 52. He sent the baby to the Infants' Hospital with the diagnosis of pneumonia. The physical examination was not made until the next day.

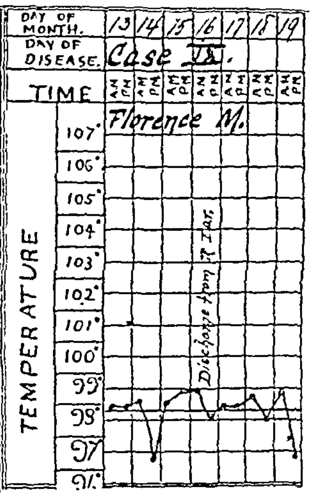
He was a large, fat baby. The color was good. The alæ nasi did not move. The fontanelle was level. There was a slight rosary. The heart and lungs were normal. The abdomen was full and somewhat tense. There was an umbilical hernia. The liver was normal, the spleen not palpable. The extremities were normal, the knee-jerks equal and lively. Kernig's sign was absent. The temperature was 100 F., the pulse 115, and the respiration 38.

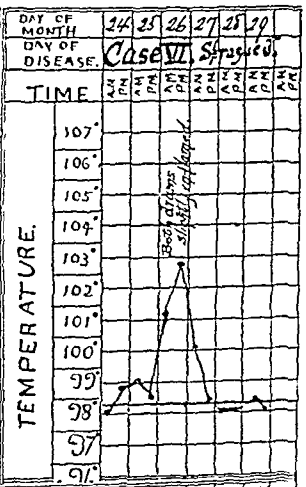
While the picture was not that of a pneumonia and the lungs were negative, the disproportion between the rate of the pulse and that of the respiration pointed to a certain extent to some pulmonary trouble. The rapid rise in the temperature and pulse rate that night, while the rate of the respiration remained the same, pointed strongly against it, however.

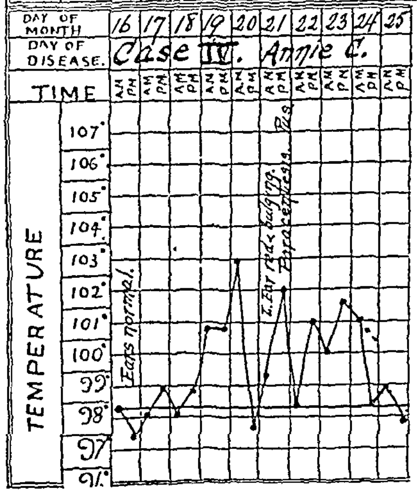
The next day, the 23d, the ears were examined and considerable reddening of the right membrana tympani was found. On the 24th it was bulging. Paracentesis was performed and a small amount of pus let out. The left drum was also reddened but did not bulge.

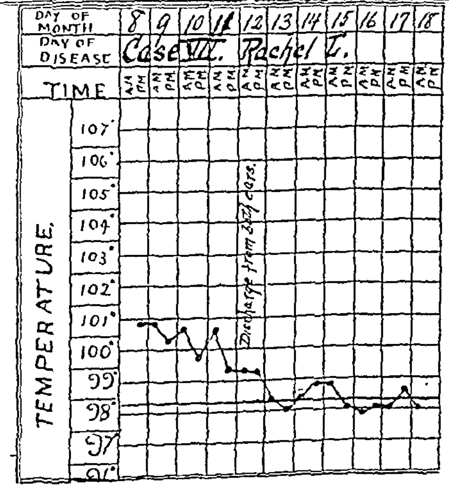
The temperature immediately dropped and showed a tendency to run lower. On the 26th, however, it rose again, as did the pulse and respiration. The respiration again rose out of proportion to the pulse. Nothing could be found in the lungs, however. Examination of the ears showed that the right was not discharging freely and that the left drum was bulging. Paracentesis was done on the left ear and the discharge re-established in the right. The temperature and pulse dropped immediately and were followed in twenty-four hours by the respiration, all remaining normal afterward.

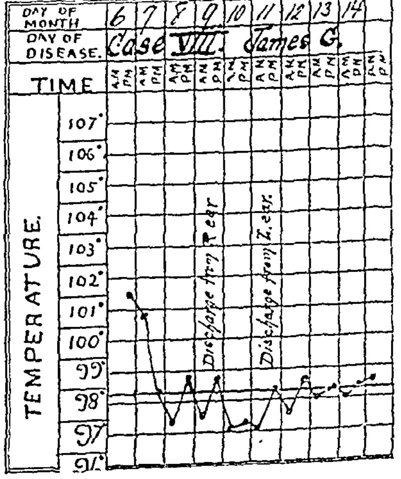












In the following case the symptoms were most unusual and misleading, all pointing to some obscure cerebral condition, either acute or chronic. The true condition was not suspected, although the patient was seen by a number of men, all of whom were well aware of the importance of ear disease in infancy as well as of the variety of its symptomatology.

Case 2.—Sadie Z., aged 15 months, had a good family history. There was no history of nervous or mental disease or anything to suggest syphilis. She was delivered by instruments, the head presenting, and was normal at birth. She had always been well except for chicken-pox at thirteen months. Her parents said that she was unusually bright mentally. She had walked alone for a month or more.

On December 13 she tripped on the floor and fell, striking her head on a chair. She did not appear to be much hurt. About this time she began to have a slight cough. December 22 she began to have "convulsions," which continued up to the time of entrance to the Infants' Hospital, December 30. The cough continued and she vomited several times daily. The bowels moved daily and the movements were normal.

She was well developed and nourished. There was moderate pallor of the skin and mucous membranes. The head was of normal shape. The anterior fontanelle was about 1.5 cm. in diameter and slightly depressed. She did not open the left eye quite as widely as the right, but closed both vigorously. The motions of the eyes were normal and the pupils reacted quickly to light. She both saw and heard. She had five teeth. Her tongue was clean. There was no rosary. The heart, lungs, liver and spleen were normal. The abdomen was negative. There was no rigidity of the head or spine. There was no spasm or paralysis of the extremities. The knee-jerks were equal and somewhat exaggerated. Kernig's sign was absent. The inguinal glands were slightly enlarged, the cervical and axillary were not. The urine was pale, acid, of a specific gravity of 1008 and contained no albumin.

She slept well and was perfectly quiet when asleep When awake there was almost always a tremor of the head and arms, although she was sometimes quiet for a short time. This tremor was rhythmical and very rapid. It was most marked in the head and arms, although it was also present in the body and legs. She was very easily excited and frightened. She then became rigid and threw herself about, crying loudly. The cry was interrupted at short intervals, but the rhythm was much less rapid than that of the tremor. In these attacks the tremor was much more marked and more rapid. In some of the attacks there was also nystagmus, usually lateral, but sometimes vertical.

The temperature was normal at entrance and never went above 99.6 F. The pulse and respiration were somewhat rapid for the first two days, but after this showed nothing worthy of note.

Her stomach was washed out and her bowels emptied with castor oil. The vomiting ceased at once and did not recur. The movements were normal. Moderate doses of bromid and chloral had no effect. Her condition continued unchanged and there was no change in the physical signs. The fundi of the eyes showed nothing abnormal.

She was seen by three specialists in nervous diseases, all of whom agreed that the fall was a coincidence and that there was no acute cerebral process. They said that the history of normal mental development must be wrong and only a congenital cerebral defect could account for the symptoms. The medical men who saw her did not agree with this diagnosis, but also ruled out meningitis and injury as the cause of the symptoms. They were, however, unable to make any diagnosis.

Her ears were examined January 4 as part of a routine examination of all the babies in the hospital. Both drum membranes were generally reddened and bulged in their upper posterior portions. Paracentesis showed pus on both sides.

Improvement was almost immediate and after the first few days was very rapid. The ears were normal on January 14 and she was discharged well a few days later. There has been no return of the symptoms.

In certain other cases of a more subacute type the symptoms are those of confined pus. The hectic temperature, often associated with chills, and the apparent absence of a local cause often lead to the diagnosis of tuberculosis or malaria.

CASE 3.—Joseph B., 22 months old, was seen July 22. He lived in a malarial district. He had always been delicate and pale. He had had a cough since an attack of bronchitis in the early spring. He had also had a slightly elevated temperature since that time. During the last two weeks he had seemed worse and the temperature had ranged higher. The night before he had had a chill, followed by a temperature of 105 F. and sweating. Nothing abnormal had been found on physical examination except pallor and a slight enlargement of the spleen. The urine showed nothing abnormal.

An almost positive diagnosis of malaria had been made on the basis of the chills, fever and sweating, the enlargement of the spleen, the pallor and the apparent absence of any other cause for the symptoms. Examination of the blood, however, showed no plasmodia and 30,000 white cells, a finding entirely inconsistent with malaria.

An examination of the ears, which had hitherto been overlooked, disclosed the seat of the trouble. Pus was found on both sides and evacuated. Improvement was continuous and rapid from that time.

Acute secondary inflammations of the middle ears are far more common than the primary forms. They occur most frequently, of course, as complications of diseases of the respiratory tract, especially when the upper air passages are involved. They are especially likely to be overlooked and their symptoms misinterpreted when the disease is mainly pulmonary, all the symptoms being attributed to the local process in the lungs. The following cases show the importance of being on the lookout for ear complications in these diseases.

CASE 4.—Annie C., aged seven months, was admitted to the Infants' Hospital March 4. She had the signs of a diffuse broncho-pneumonia on the right side, and those of a general bronchitis on the left. She was also poorly nourished and slightly rachitic. The temperature fell to normal on the 6th and there remained. The general condition improved and the lungs cleared up, except for a few râles in both backs. A routine examination on March 16 showed that the ears were normal.

There was a sudden rise in the temperature, pulse and respiration on the 19th. A recrudescence of the broncho-pneumonic process was of course suspected. Nothing new was found in the lungs, however, either then or later. Finally on the 21st the ears were examined, and the left drum found red and bulging. Paracentesis let out a small amount of pus. The temperature continued irregularly elevated for several days and then dropped to normal, where it remained.

CASE 5.—Arthur C., aged seven months, was admitted to the Infants' Hospital February 28, with broncho-pneumonia. On March 14 there was dulness in the left back with bronchial respiration below the spine of the scapula. Many coarse, moist râles were heard throughout both lungs; they were most numerous at the left base. The temperature was normal and the rate of the pulse and respiration but little increased. A diagnosis of convalescence from broncho-pneumonia was made.

He did perfectly well until March 16, when the temperature, pulse and respiration began to rise, reaching their maximum on the 18th. The rate of the respiration rose out of proportion to that of the pulse. Everything pointed to a lighting up of the process in the lungs. The examination of the lungs, however, showed only slight dulness in the left back below the angle of the scapula with slightly changed respiration and a few coarse, moist râles in both lower backs, a much better condition than four days previously. An examination of the ears showed that both drums were reddened and bulging. Paracentesis disclosed pus on both sides. The temperature fell rapidly to normal and there remained. Nothing developed in the lungs.

Inflammation of the middle ear may develop in any of the diseases of infancy as well as in those of the respiratory tract. They are especially common in conditions of malnutrition, whether or not due to diseases of the gastroenteric tract. The amount of reaction seems to depend a good deal on the general condition of the infant, being less marked in the feebler babies. It is not at all uncommon at the Infants' Hospital to have one-third or one-half of the babies with serious disturbances of nutrition develop middle ear inflammation. The following cases are examples:

CASE 6.—Sprague J., 3½ months old, had always been improperly fed and had always had colic, vomiting and diarrhea. He had recently lost weight pretty rapidly. He was admitted to the Infants' Hospital March 12.

He was fairly developed and nourished, but rather pale. The physical examination was negative except for a slight rosary. A routine examination of the ears a few days after entrance showed nothing abnormal.

He responded very quickly to proper food, stopped vomiting, and after a few days had normal movements. He did not gain in weight, however.

On March 26 the temperature suddenly rose to 102.8 F. The pulse and respiration did not rise, however, and no other symptoms developed. Nothing abnormal was found on physical examination until the ears were examined, when both drums were found slightly inflamed. No treatment was instituted. The inflammation in the ears rapidly subsided in the next 24 hours and with it the temperature fell to normal, where it remained.

CASE 7.—Rachel L., five weeks old, was admitted to the Infants' Hospital June 8. She had always been improperly fed, had always vomited and had green, watery movements. She had lost weight rapidly during the week before entrance.

She was small and thin. The skin was mottled and the extremities cold and slightly blue. The anterior fontanelle was depressed and the cranial bones overlapped. The abdomen was distended. The examination showed nothing else abnormal.

She took her food well and vomited a little, but had three or four green, watery movements with curds and mucus daily. The elevated temperature, which varied between 100 F. and 101 F., was attributed to enteric disturbance.

Both ears began to discharge on the 12th. The temperature immediately fell to normal, where it remained. As there was no improvement in the condition of the digestive tract the fever must have been due to the process in the ears.

While middle ear disease in infancy usually causes some symptoms, even if nothing more than a slight rise in the temperature, it may develop and go on to perforation of the drum membrane without producing any symptoms whatever. This happened in the two following cases. They suggest strongly the advisability of routine examination of the ears in all sick infants, no matter what the disease or whether or not there are symptoms pointing to aural trouble.

CASE 8.—James G., aged 2½ years, entered the Infants' Hospital just on the crisis of a lobar pneumonia. The temperature did not rise again and the lungs cleared up rapidly. He presented no symptoms whatever suggesting trouble in the ears or elsewhere, yet three days after entrance the right ear began to discharge, and two days later the left ear.

CASE 9.—Florence M., aged three months, entered the Infants' Hospital March 7. No history came with her. She was emaciated and the skin was mottled. The anterior fontanelle was small and depressed. There was a slight rosary. The physical examination was in other respects negative.

She took her food well, seldom vomited, had nearly normal movements and gained in weight. She had no fever at any time and showed no symptoms pointing to aural trouble. Nevertheless a discharge from the right ear appeared March 16.

In conclusion, I wish to thank Dr. T. M. Rotch for permission to make use of such of the cases as were on his service. The examinations of the ears, as well as the operations, were done by Dr. E. A. Crockett, aurist to the Infants' Hospital.

LOCOMOTOR ATAXIA

COMPLICATED BY THROMBOSIS OF THE PONTILE ARTERIES, WITH REPORT OF CASE.

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W. R. M., male, admitted to St. Anthony's Hospital June 5, 1899, aged 45, traveling salesman, born in New York, in Colorado fifteen years. Family history negative.

Previous History.—Had the usual diseases of childhood, after which he enjoyed good health until he was fifteen years of age, when he met an accident, fracturing his right leg. At 20 years of age he contracted gonorrhea. When 40 years old he suffered from severe pains in the legs, which were sharp, shooting and momentary in character and were influenced by changes in the weather. About the same time he noticed that his gait was gradually becoming unsteady and at the present time he is unable to walk in the dark without falling. Three years ago he complained of a girdle sensation, also difficulty in starting his urine to flow, although while asleep the urine dribbles from him. During this year, while alighting from a street car, he fell, striking his buttocks without any serious consequences. For the past two years vision has failed, but he never sees double.

Bowels regular. Denies alcoholism. Had syphilis when 25 years of age. Several months before his present trouble manifested itself he suffered from headaches and dizziness, but did not have any transitory weakness on either side of the body.

Present Illness.—Began thirty hours previous to being admitted to the hospital. After eating a very hearty breakfast he suddenly became so dizzy that he was unable to remain in the erect posture, also suffered from numb and tingling sensations in hands and feet, more marked on right side of the body. At the same time complained of a sharp shooting pain over the left eye, which was momentary and recurred at intervals. The dizziness, numb and tingling sensations continued for ten or fifteen minutes, when he noticed that he was unable to swallow, although he was able to talk, but his voice was weak. At the same time he complained of weakness of the right arm and leg, although he was able to walk. At no time during the attack did he lose consciousness.

Examination.—There is marked ataxia in legs and arms and slight in the trunk muscles. On assuming the upright posture the dizziness is so great that he falls to the floor. Knee jerks: right, absent; left, same. Ankle clonus, absent. Tendo achillis: right, slight; left, slight. Deep reflexes of forearm: right, present; left, same. Masseter, absent. Plantar reflexes, increased. Cremasteric: right, increased; left, absent, probably due to the presence of a large scrotal hernia. Abdominal, absent. Muscular power in right arm and leg very much diminished compared to the opposite side. Tactile, joint, pressure and muscular senses present.

Pain sense: He is unable to distinguish the difference between a dull or a sharp point on the right side of the body, nor is pain complained of when pricked with a sharp point. Throughout the left side pain sense is present. Temperature sense is lost on the right side, but is present throughout the left side. Muscular power in the lower portion of the face decidedly impaired and the mouth is drawn to the right. Voluntary movements are more affected than emotional. Tongue deviates to the left. Left side of palate hangs much lower than right and on tickling the left side no reflex is produced, although it is readily elicited on the opposite side. Respiratory movements decidedly increased. Voice very husky, but every word pronounced distinctly. Dynamometer: right, 50; left, 66.

Pupils: right is larger than left and both respond to accommodation, but not to light. External ocular movements good. Fundi and fields of vision normal. Hearing: right (watch) heard on contact; left, 12/24. Taste: present on right side; absent on left. Smell: present on right, and absent on left.

July, 16, 1899. Patient is able to swallow liquids, but insufficient to sustain life.

July 23, 1899. Is able to take soft food and liquids. Feeding by tube resorted to occasionally.

July 30, 1899. Use of the tube unnecessary. Dizziness still present. Examination of heart shows an aortic systolic murmur. Urine, sp. gr. 1021, no albumin or sugar.

This case is of interest from two points of view, as the symptoms indicate that the brain and spinal cord are involved. The symptoms from which the patient suffered previous to his present trouble are characteristic of degeneration of the spinal cord, although the motor form of multiple neuritis must be considered in making a differential diagnosis. The presence of the Argyll-Robertson pupil, girdle sensation around the trunk and involvement of the sphincters would be sufficient evidence that the lesion is in the cord. The absence of paralysis of the extensor muscles, tenderness of same and the disease not being distinctly peripheral, symmetrical and bilateral and without reaction of degeneration, would exclude inflammatory affections of the peripheral nerves. In ataxic paraplegia the ataxia is preceded by a spasm of the muscles, increase of the knee jerks, and the absence of sensory symptoms would be sufficient to eliminate this disease in arriving at a conclusion. The length of time the symptoms have existed would exclude all acute lesions of the cord. The patient suddenly became affected with dizziness, which was so intense that he was unable to assume the upright posture, with paralysis of the lower left side of the face and paralysis of the right arm and leg, associated with disturbance in sensation of the same side of the body. At the same time he had loss of power in deglutition, loss of sensation on the left side of face and mouth, with loss of taste and smell on the same side.

All these symptoms indicate that the secondary lesion is in the brain, and to determine its probable nature it is best to consider some of the acute, chronic and sudden diseases of this organ. The time consumed in the development of the symptoms in this case, without any elevation in temperature, would enable one to pass all inflammatory diseases of the encephalon.

The chronic lesions are morbid growths, abscess and aneurism. The history of this case and the non-involvement of the optic nerves by inflammation, with the resulting atrophy, would exclude aneurism and morbid growths.

The onset of the symptoms which complicated the locomotor ataxia was sudden, reaching its height in a few minutes; excluding traumatism, all such cases are vascular in nature.

The vascular lesions to be considered are hemorrhage, embolism and thrombosis. Absence of a full, strong pulse, throbbing carotids, loss of consciousness and slight disturbance in bodily temperature would not be in favor of cerebral hemorrhage. Small or gradual hemorrhages may occur without marked disturbances in consciousness, with slight paralysis and without great disturbance in the bodily temperature.

On admission to the hospital the symptoms in this case were extensive without any involvement of consciousness, and the exclusion of a hemorrhagic lesion is justifiable.

In cerebral embolism the symptoms come on suddenly, with marked disturbance in consciousness, associated with some form of cardiac disturbance, and without the latter one is not justified in arriving at such a conclusion. The patient under discussion has an aortic systolic murmur, but cardiac compensation is well maintained and an embolus affecting the portion of the brain where this lesion is located would produce sudden profound unconsciousness, with bilateral involvement of the extremities, without any premonitory signs, and the symptoms produced would depend on which portion of the basilar artery was affected.

The upper portion of the basilar artery is most frequently occluded by an embolus, and the symptoms manifested may simulate those of locomotor ataxia to a certain extent, particularly the ocular symptoms, but differ from those produced by a vascular lesion by being transient and associated with paralysis of the opposite side of the body.

The diagnosis of thrombosis was, therefore, made on the following symptoms: premonitory symptoms, headache, dizziness, with numb and tingling sensations in the parts subsequently paralyzed. The paralysis came on suddenly without loss of consciousness and with the characteristic disassociated symptoms in the affected parts.

A lesion of the cerebral cortex, centrum ovale and internal capsule can be excluded by the character of the paralysis and the presence of the disassociated symptoms, along with disturbance of deglutition and involvement of other cranial nerves. Disturbances in the brain at any of these locations would produce a monoplegia or hemiplegia on the opposite side of the body and if it is a hemiplegia the paralysis would not be crossed.

Affections of the crura are always accompanied by paralysis of the third nerve on the side of the lesion, with motor paralysis on the opposite side of the body.

The symptoms produced by lesions in the medulla are usually bilateral and from the number of cranial nerve centers affected, the patient would present symptoms similar to those found in bulbar paralysis, excepting that sensory symptoms are more frequently associated with the motor manifestations in vascular disease of this organ. Lesions in the pons produce all the symptoms which are present in the case under discussion, and it is of interest to know which portion of the pons is affected. Diseases in the extreme upper portion of the pons can be excluded, as we have no involvement of the third nerve nor crossed paralysis. The symptoms in the case are complex and show that the lesions are multiple.

If the disease was below the middle of the pons it would cause crossed paralysis, but the upper and lower portion of the face would be affected. Lesions just above the middle of the pons would produce paralysis of the lower portion of the face on the same side as the lesion with disturbance in motion and sensation on the opposite side of the body in the form of disassociated symptoms (loss of pain and temperature sensations, while tactile sense is preserved).

Loss of taste, smell, rapid respiratory movements and the inability to swallow may be accounted for by the involvement of the extreme lower portion of the pons and upper part of the medulla oblongata.

Vascular lesions in this position, after the irritative symptoms have ceased, can be more accurately located than other diseases, particularly tumors, as in the latter the irritative symptoms remain throughout their course.

The symptoms demonstrate that a number of vessels are affected and that they are those which supply the pons just above the middle, the extreme lower portion and the upper part of the medulla oblongata.

The character and extent of the symptoms indicate that the small arteries are affected inasmuch as those produced by involvement of the large vessels would be more extensive, with marked disturbance in consciousness, and bilateral in nature.

Causes of cerebral thrombosis are many, and the most prominent are atheroma, syphilis and blood states. No evidence of atheroma could be discovered in any of the superficial vessels in the body, and with a distinct history of specific infection one is justified in attributing the occlusion of the vessel to a syphilitic arteritis.

The large vessels at the base of the brain show the greatest changes in their walls, but the narrowing of the caliber of the artery is more pronounced in the small branches.

The changes that take place in the walls of the diseased vessels consist of inflammation, swelling and a gummatous deposit and, as a result, a lessening of the caliber.

Occlusion of an artery in thrombosis goes on gradually, but the final and complete plugging comes on suddenly by the formation of a blood clot.

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A NEW METHOD OF BACTERIAL VACCINATION.

As is well known, bactericidal sera, in contrast to antitoxic sera, have been extremely disappointing from the view-point of therapeutics. None, even the antistreptococcus serum, has an unassailable position in the treatment of disease in man. Experimental animals may in some cases be given a temporary immunity to certain bacteria of several days' to two weeks' duration. But the serum is rapidly excreted, and takes with it all its protective powers, i. e., its specific amboceptors. Even in this case it is a prophylactic injection, and not a curative. In view of the transient duration of the immunity conferred by an injection of bactericidal immune serum, its indiscriminate injection during an epidemic would probably be unjustified. On the other hand, bacterial vaccination, such as that of Haffkine against plague, while it appears to have been of value, has the objections that it often produces grave symptoms, is followed by a short period of decreased immunity, and if it should happen to coincide with an attack of the disease would probably seriously injure the patient's chances of recovery.

With the view of overcoming the disadvantages of the Haffkine injections, Besredka[1] injected a culture of an organism which had been treated with the specific amboceptors for that organism. It will be recalled that amboceptors are the intermediary bodies that bind the complement to the bacilli. The amboceptors resist heat, low degrees of which (56 C.) destroy complement. For example, a culture of the typhoid bacillus was suspended in salt solution and enough heated antityphoid serum added to cause complete agglutination. The mixture was allowed to stand for six hours, during which time the bacteriolytic amboceptors, as well as the agglutinating bodies, are fixed to the bacteria. The bacteria were then washed free of serum by repeated centrifugating in salt solution. The sediment, consisting of typhoid bacilli plus the immune bodies, was then injected into animals. It was found that immediate immunity was conferred, which endured for at least five or six months. No general or local symptoms followed the injection; and this was true of an injection Besredka made in himself. The same experiments were made with cholera and plague; in working with the latter killed organisms were used.

Of equal interest are the results of Marie,[2] who used the technic of Besredka in experimenting with rabies. For injections he used the brain of an animal which had died of rabies. The brain was subjected to the action of antirabic serum as the bacteria were to the action of the antibacterial serum. Also here a single injection conferred immunity which lasted for a number of months, the maximum duration not being determined.

The value of this method of prophylaxis over the Haffkine injections is apparent. As to rabies, it would apparently have advantages over the classical Pasteur method of treatment. However, it would require great courage to inject a fresh rabic brain into a human being. no matter how many antirabic amboceptors it may contain. In addition it is quite possible that a mixture which is harmless to a rabbit may not be a neutral one for man. It may be possible that in bites on or near the face, where the incubation period of rabies may be shortened, this method would be superior to the usual Pasteur treatment. If Besredka's results find sufficient confirmation, it would not be altogether impracticable, though difficult, to immunize whole communities against typhoid, cholera or plague.

AMERICAN RESEARCH AND GERMAN REVIEWERS.

There is no contributor to American biologic literature in the branches of medicine and the allied sciences, who has not had occasion to note the marked disregard of German writers for contributions that do not bear the mark "made in Germany," this being particularly noticeable when it concerns work published in this country. Time was when we felt hurt that our struggles to do good honest research were not appreciated, perhaps not believed, by those to whom we owed most of our foundations in science. Now the situation has changed. With our new wealth of production, its best undoubtedly of the very highest quality, we are inclined to merely wonder when the Teutonic awakening is to come. How long before the German will appreciate that if other peoples are diligently reading all that he is producing as well as that of their own countries, while he limits his view to German scholarship, he will soon be at a hopeless disadvantage? As we see the German surgeons discussing points in the pathology and treatment of appendicitis that were long ago hackneyed to us; or read frightful tables of mortality from operative methods in tuberculous hip joint disease that American surgeons have happily forsaken for better measures, we appreciate that the teacher can never afford to neglect to watch the products of the pupil. And when a German reviewer[1] attempts to make a "zusammenfassendes Referat" of the work done on the subject of intestinal digestion without the slightest knowledge of the important contributions of Hill and of Kastle and Lovenhart, merely because they were printed in the English tongue, there is good ground for feeling that we are by no means the chief losers because of the lack of German recognition.

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[1] Besredka: "De l'immunization active contre le peste, le choléra et l'infection typhique." Ann. de l'Inst. Past., xvi, 1902, p. 918.

[2] Marie: "Immunization par des mélanges de virus rabique et de sérum antirabique." C. r. Soc. de Biologie, Dec. 5, 1902.

[1] Biochemisches Centralblatt, 1903, i, 169.

An American writer recently took the trouble to write to a German scholar to inquire why he had omitted certain fundamental articles published in America, in reviewing the literature of a certain subject. More amusement than chagrin was elicited by the reply; for, in addition to stating with great complacency that he had not seen the articles in question because the journal containing them was not to be found in the small university town in which he resided, this German in a most benignant manner made the suggestion that if American scientists wished their papers read they should print them in German. It was with no little pleasure that the American in reply could quote figures as to the relative numbers of English-speaking and German-speaking people of the world, with a few additional remarks as to the importance of considering rate of growth in determining the status of any particular subject. The figures really made it seem that there were quite a few people who could read a paper published in English. We have recently heard much of Chauvinism in medicine as synonymous with what has also been termed the arrogance of provincialism. Is not Chauvinism likely to become a danger to that glorious German scholarship that has had no greater admirers or more eager followers than the American scientists?

It is pleasing to observe the occasional reverse of the above conditions, and to see that in some subjects, at least, we are appreciated. Rudolf Höber[2] quotes twenty-nine references in a review of the topic of the rôle of the neutral salts in protoplasmic activity, and of these twenty-one are by American and English writers, published partly in German and partly in English. This Anglo-Saxon predominance is, of course, attributable to the work of Loeb and his scholars, who have easily accomplished the greatest advances in this new field of biologic research. The custom followed by Loeb of publishing part of his work in Germany and part in America, would, if generally adopted, soon compel Germans to search in American publications, but we must insist that there is no particular obligation or need to show them what we are doing. Theirs must be the loss that is bound to fall on those who fail to appreciate that science is cosmopolitan and polyglot. We must also note that American publications are not alone overlooked; English work also seems to escape German eyes. French reviewers, on the other hand, as a rule, cover our publications much more thoroughly, and the admirable abstract department of certain French journals gives ample consideration of all the leading American journals. With our many magazines of medical science overwhelmed with articles reporting actual research we may hope the terse German summary of "Nichts neues" that has so often appeared under an American title, will soon disappear. To the justice of the use of this summary in so many instances hitherto we must attribute, in all honesty, much of the present German oversight, but at the same time we insist that the need for its use is passing. We are doing much work that is "Etwas-neues," not to mention "einwandsfrei."

THE FROUDE-CARLYLE CONTROVERSY.

As the Froude-Carlyle controversy has taken a medical turn, it will not be out of place to refer to the matter in these columns. It will be remembered that about twenty years ago Froude, in editing Carlyle's reminiscences and letters, made Carlyle appear as a cruel and inconsiderate husband and his wife as a martyr, at least it so appeared to one side in this controversy. The whole question once so earnestly discussed has again been brought before the public by the appearance of a series of letters of Mrs. Carlyle.[1] Not the least interesting part of these two volumes is the long introduction by a well-known London medical man, Sir James Crichton-Browne. With wonderfully vigorous English he defends Carlyle against the charges of cruelty and neglect, and denounces Froude as an incompetent editor who was not only careless, but who maliciously misrepresents in order to prove his point, viz., that Mrs. Carlyle was abused. These new letters strongly supported Sir Crichton-Browne's contention.

But the matter did not rest here. Goaded by the stinging words of Crichton-Browne and the editor, Alexander Carlyle, son of Thomas, Froude's relatives have now published a pamphlet written by Froude and found among his papers.[2] In this Froude directly charges the antagonism to his editorship to the fact that the Carlyle relatives felt that they, and not he, should reap the financial reward arising from the publishing of the Carlyle papers. But more than this, he declares that the true cause of the unhappy home life of the Carlyles was its lack of children, and that for this Carlyle was to blame. In a word, Carlyle was impotent. To this charge Sir James Crichton-Browne replies, and very appropriately in the pages of a medical journal,[3] by declaring that the cause of the childlessness lay probably in Mrs. Carlyle. She was, he believes, sterile. He shows by well-chosen argument, some of it amounting to proof, that Carlyle was not unfit physically to be a husband. To any one who will read the letters of the first few years of their married life it will seem incredible that their relations were merely those of "companions." We omit the details of the pamphlet and of Crichton-Browne's rejoinder. It is truly shocking to think of this dissection of one's home life and of a public discussion of the most intimate marital relations. It is disgusting. As the *London Times* has said, what the Froude relatives have done "is a serious offense against reverence for the dead, if not against decency and decorum."

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[2] Biochemisches Centralblatt, 1903, i, 497.

[1] New Letters and Memorials of Jane Welsh Carlyle, London and New York, 1903.

[2] Froude: My Relations with Carlyle, London and New York, 1903.

[3] British Medical Journal, June 27, 1903.

We prefer to look upon the Carlyle household as not angelic but as human. Two strong-minded individuals, their marriage unfortunately unblessed by children, living under the same roof for twenty-four hours of the day —for the home was also Carlyle's place of business, his literary workshop—both sufferers from physical ailments, both of strong likes and dislikes, is it any wonder that there were occasional storms? Carlyle growled and his wife snapped back. The course of true love evidently did not run smooth in the Carlyle family. And the ill health of this couple may explain much of the apparent unhappiness.

Carlyle was a dyspeptic, or perhaps had eye-strain, as Dr. Gould contends. At any rate he had headaches and felt out of sorts at times. Mrs. Carlyle was a neurotic, as her mother had been before her. In fact she and her mother got along very poorly when they were together. Mrs. Carlyle had severe sick headaches, "such headaches I never witnessed in my life," writes her husband. She was a neurasthenic. She dosed with all kinds of drugs and took freely of opiates for the relief of pain. Carlyle says: "When any new miraculous kind of doctor was recommended as such my poor, struggling martyr, conscious, too, of grasping at mere straws, could not but wish to see him; and he came, did his mischief and went away."[1] Even "magnetizers" were tried.

Physicians are familiar with this type of woman and oftentimes our sympathy is fully as much with the enduring husband as with the suffering wife. For ten years, according to Sir James Crichton-Browne, Mrs. Carlyle suffered from a climacteric melancholia. Unnecessarily suspicious, morbidly sensitive, racked with physical pain, often under the influence of opiates, her mind, as shown by her letters and by her journal, was lacking in that cool judgment that is found in one well balanced. This was not, as Froude would have us think, all the result of ill treatment by her husband.

The whole controversy has been, to say the least, unfortunate. Especially is this true of the discussion concerning the barrenness of the marriage. The indecency of it all sets the tongues of the prurient wagging and fills the columns of the yellow journals. Altogether, it leaves a bad taste in the mouth.

"KOCH CONSUMPTION CURE" AND NEWSPAPER ADVERTISING.

Some time ago[1] we commented on an exposé by a magazine of the so-called Koch consumption cure concern. Recently the matter has been taken up by the health department and by the physicians of New York City, and the District Attorney, it is understood, has in his possession sufficient information to warrant him in proceeding against the concern, so it looks as if it would soon be in the toils of the law. The health department has issued a statement warning the public against it, and states that the head of the institution is not registered, and has no authority to practice in New York State. The representative of this concern is variously known as Dr. Philip Koch, Dr. Edward Koch, etc., and to avoid the embarrassments arising from violation of the state laws regulating medical practice he is kept moving from one part of the country to another. He is generally in the background after his arrival in a place, and can not be inveigled by strangers to examine them or to receive fees. He is reported to have graduated from the Missouri Medical College in 1881. We are informed that the company is incorporated with a capital of $125,000, that its president is Dr. Wallace Cleveland Clark of 150 Nassau street, New York, and that the manager of the New York branch is Dr. Frank Bigelow, who receives a salary of $80 per week, while his assistant, Dr. Jordan, receives $40 per week. The published correspondence from the concern makes instructive but melancholy reading. Some idea of the immense profits may be formed from Dr. Bigelow's statement that in the month of June, while a poor one, they took in at the New York branch alone $3,500. A part of the testimony taken before Judge Lacombe of New York is stated to show that the magic fluid called "Koch's Inhalation Fluid, or Tuberculine," which costs $10 per month to have it "strengthened," is simply a petroleum oil, colored reddish. Sometimes it is scented with oil of thyme, with oil of eucalyptus or with oil of cinnamon.

While this institution is before the public eye at the present time, it must not be forgotten that it is only one of many such concerns that are using the sick and afflicted as their dupes. There can hardly be imagined anything more base than that of a man deliberately making a business of swindling by fraudulent promises to cure those who are suffering from incurable diseases. Nevertheless there are scores of such individuals and concerns getting rich by like nefarious and execrable practice. One of the most discouraging things is that nearly all of our reputable newspapers are openly endorsing this inhuman business, their columns are defiled by the indecent and vicious advertisements of harmful medical nostrums, and of pure swindles gotten up solely for the purpose of getting the money of the unfortunates whose condition makes them ready to grasp at every straw that offers relief. It is a pity that respectable and influential newspapers should lend themselves to help such frauds just for the few dollars that come from carrying such advertisements. The evil is one that has long existed, but that is no reason why it should continue.

THE DANGER FROM BACTERIOLOGISTS.

A correspondent of our contemporary, the *Cincinnati Lancet-Clinic*, says that it is strongly suspected throughout continental Europe that some bacteriologic laboratory is manufacturing poisons to sell to designing persons at high prices. Such things are possible. It would be easy for one thoroughly accomplished in bacteriologic work, and likewise imbued with the "devilishness" of commercialism, to start this kind of a manufactory regardless of consequences. The threat of the Macedonian insurgents to introduce plague into Turkish cities is probably a mere *brutum fulmen*, and their giving away of the plans has disarmed them to a great extent, but it is not difficult to conceive of the mischief that might arise should such plotters act before telling. The danger is one that may yet have to be met, although we need not lie awake nights worrying about it. As long as bacteriologic laboratories are in the hands of high class medical men, the danger is *nil*, but, of course, there is no assurance that others impelled by sinister motives could not take up the work, and no reason why they could not be successful in doing an incalculable amount of harm. But there is no need to fret about it until there is more cause than is apparent now, at least in this country.

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[1] Reminiscences, N. Y., 1881, p. 481.

[1] THE JOURNAL A. M. A., May 9, p. 1295, Vol. xl

DANGER FROM ETHER IGNITION.

The danger of ignition of ether vapor is well known to the profession and due precautions are usually taken against it. In one of our contemporaries, noticed in our last issue,[1] appears an account of a new source of this danger which could not have been ordinarily anticipated. Dr. Dwight H. Murray reports to the *New York Medical Journal* the ignition of ether vapor during an operation by the sudden turning on of an electric bulb light by the anesthetist. How this happened it is hard to say, though his theory is that it must have been due to some action of the electric spark, leakage, we might say, that was sufficient to inflame the combustible gas. That such instances are rare is, of course, self-evident. The fact that the surgeon in question experimented a number of times to reproduce the condition without success leaves a little doubt in our minds as to the actual occurrence of the facts as they appeared to him. It also, however, leaves an uncomfortable little doubt as to the safety of using even electric lights in the presence of ether vapor. Anesthetists will doubtless take heed to this unique experience and govern themselves accordingly.

SYPHILIS AND SUICIDE.

In a recent article Fournier discusses the connection of suicide with syphilis. He has had in the course of his observation some eighteen cases of suicide in syphilitics, in all of which the disease seemed to have a direct connection with the act. He has known of eight cases of suicide on account of the disfigurement, either from syphilitic lesions or some trifling lesion which the subject regarded as a sign of worse to follow or mistook for syphilis. The mental condition of those suddenly learning of the infection may lead to what might almost be called a reflex suicide. Fournier says that he has more than a hundred times seen strong men turn pale, sink down, and sometimes even lose consciousness from shock when told that they had the disease, and this in subjects otherwise unimpressionable and intrepid in danger. It is his experience that women display much more equanimity in regard to the disease than do men; it has a less mental effect on them when acquired. He strongly condemns brutal declarations of their condition to the patients; the announcement should be guarded and gradually led up to; doubt should be expressed at the first or second examination, and if the patient is informed of his condition it should be followed by the statement that it is not severe, and that it is controllable, if not curable. In case of intending marriage, however, the physician's duty is imperative.

IMMUNIZATION AGAINST TUBERCULOSIS.

The rather remarkable address of Maragliano on "The Struggle and Immunization of the Organism Against Tuberculosis" at the Madrid Congress has been noted in abstract in this journal.[1] It has also been republished[2] in this country, and has excited more or less public attention. The lay press has taken the subject up and discussed it with its usual mixture of lucidity and misunderstanding. Naturally, the statement that an investigator has obtained a vaccine which will produce immunity in the human subject against tuberculosis is a stirring one, and especially since at the present time the public generally, and we might also say many physicians, have a rather exaggerated idea of the importance and fatality of this disease. Those who have prophesied the eradication of tuberculosis will take up these statements and see in them a forecast of results they have predicted. It seems to us, however, that we may overestimate the importance of these announcements, and that it is worth while to at least accept them with some reservation until further experimentation and clinical experience have more fully verified them. The disputed questions in regard to tuberculosis are not a few, and this one of human immunization to the disease may yet take its place among the more important ones like Koch's announcement of the non-intertransmission of bovine and human tuberculosis. If Maragliano is right in his assertion that the ingestion of milk and flesh of tuberculous animals produces immunity, a large proportion of the civilized population of the world must have acquired it by this time. Moreover, if a single attack of surgical tuberculosis produces immunity against the disease in all its forms, the number of immune must also, for this reason, be very large. It has been an accepted belief, based on what are supposed to be clinical facts, that old tubercular foci might be revived, and that they are consequently a source of danger in those who possess them. Certain able pathologists declare that with careful examination nearly every autopsy will reveal some traces of former tuberculosis. This would indicate that while no one was originally immune, everybody had a chance and ought to become so, by action of tuberculous attacks, if Maragliano's theory is correct. On the whole, it seems to us worth while to continue to believe that while a certain degree of immunity is probable, and while there may be a certain basis of fact for Professor Maragliano's theories, yet it will not do to accept them too freely or attempt to make them universally applicable.

PRELIMINARY EDUCATION FOR NURSES ENTERING TRAINING SCHOOLS.

Of the utility of the trained nurse there is no longer any ground for discussion. From having originally been a luxury, to be availed of only by the wealthy few, she has become an every-day necessity, whose services are in constant demand among all classes of the community. In the process of evolution, the requirements of a good nurse have been gradually increased, and for the fulfillment of these the courses of study have necessarily been lengthened, and the character of instruction has been correspondingly modified. Training in the mere practice of nursing can no longer be considered sufficient, but a thorough grounding in the principles of the work has come to be looked on as an important prerequisite. Like the medical student, so the pupil-nurse should come equipped for her pursuit with special as well as general educational qualifications. A plea upon these lines has recently been made by Dr. Francis P. Denny,[1] and to meet the present need he lays down the following urgent requirements: 1. Leisure for study. 2. Instruction in the principles of nursing before beginning practical work. 3. Instruction by those especially fitted to teach. 4. Improved methods of instruction. That this need has been appreciated, in part at least, by others, and that steps have already been taken to provide the remedy is shown by the announcement of the Drexel Institute of Philadelphia for 1903-04 that at the solicitation of Dr. S. Weir Mitchell and the superintendents of the leading nurses' training schools of Philadelphia, the Drexel Institute has undertaken to organize a preparatory course of instruction for such training schools, including the subjects of anatomy and physiology, medical chemistry, materia medica, hygiene, bacteriology, domestic science and economics, as well as English language, vocal expression and physical training. The course occupies about thirty-six weeks, and is divided into two terms. Certificates will be issued to those who complete the full course and pass the required examination. It is possible that work of a like character has been undertaken elsewhere, but it seems worth while to make a record of the beginning of a movement whose influence is likely to be most useful and far-reaching. Further, the experience gained from this work may serve as a guide to others engaged in other places in similar work. It is fitting that grateful acknowledgment be made of the part taken in the movement by Dr. S. Weir Mitchell, who has always exhibited the greatest interest in nursing and nurses, and who has in many ways done so much for the uplifting of his profession.

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[1] The Journal A. M. A., July 11, p. 131.

[1] The Journal A. M. A., July 4, p. 67.
[2] Medical News, July 4.

Medical News.

ILLINOIS.

Personal.—Dr. and Mrs. Jacob Schenck, Mount Carmel, started July 4 for a four months' trip abroad.——Dr. Edward H. Thomas, Augusta, has resigned as trustee for the Illinois Hospital for the Incurable Insane.

Bartonville Cottage Contracts Let.—The board of trustees of the Illinois Hospital for the Incurable Insane, Bartonville, has awarded the contract for the erection of eight cottages to a Peoria contractor whose bid was $23,000 higher than the lowest bid made.

Hospital Additions Delayed.—The buildings which the Cook County Board of Commissioners propose erecting this summer at the County Hospital and the Dunning institutions have been delayed because the commissioners can find no purchaser for bonds at 3½ per cent.

Cornerstone Laid.—The cornerstone of Logan Hall, a building to be used for school rooms, gymnasium and dormitories for children under 10 years of age, was laid at the Beverly Farm Home and School for Nervous and Backward Children, Godfrey, to-day. The building will cost about $5,000, and will increase the capacity of the institution to 50.

Chicago.

A Polylingual Medical Dictionary Under Way.—Dr. Karl von Klein of Chicago is compiling a medical dictionary which aims to include all medical terms in every language.

Personal.—Dr. E. C. Dudley has been re-appointed a member of the board of education.——Dr. Albert C. Eycleshelmer, assistant to the chair of anatomy at the University of Chicago, has resigned to accept the professorship of anatomy in the University of St. Louis.

Illinois Medical College Changes.—Drs. J. F. Presnell, late surgeon U. S. V., and Frank Byrnes, have been elected junior professors of surgery. Dr. William F. Waugh has severed his connection with the college. The college has completed its new buildings, one of which is devoted to anatomical laboratories and the other is to be used as a training school for nurses.

Same Mortality.—The total of 563 deaths recorded by the bureau of vital statistics for the week ended July 11 was precisely the same as that of the previous week. Among these were 26 from sunstroke, and, as other direct results of high temperature, an increase of 38 deaths from the acute intestinal diseases, "convulsions" and the nervous diseases. Only 7 deaths were reported from typhoid fever, as compared with 11 during the week before.

MARYLAND.

Bequests.—By her will the late Mrs. Harriet Lane Johnston, Baltimore, bequeathed $90,000 for three free scholarships for the Johns Hopkins University, $1,500 to the National Homeopathic Hospital, $2,000 to the Church Home and Infirmary, and a reversionary amount for the Home for Invalid Children.

Personal.—Dr. John T. King sailed for Antwerp, July 11.——Dr. Joseph T. Hering of Westminster has been commissioned assistant surgeon of the First Maryland Regiment, now in camp at Belair.——Drs. Clinton Cushing of Washington, J. C. Jones of St. Louis, E. P. Quain of Bismarck, N. D., sailed from Baltimore for Bremen, July 8.

Contracts Let.—The contract for the erection of the new building for epileptic patients at the State Hospital for the Insane, No. 2, Sykesville, Md., has been awarded at $25,590. It will be of two stories, and of brick and terra cotta, 200 feet long, 50 feet wide in the center, and 25 feet wide in each wing. There will be accommodations for 100 persons, and 12 private rooms. The digging of the foundation has already been nearly completed, largely the work of the patients. The hospital is so crowded that the workshop has to be used for some patients.

Chair of History of Medicine.—A professorship of the history of medicine has been instituted at the University of Maryland School of Medicine. This is the first instance in which there has been a full professorship to this branch in any American school or university, although lectures have been delivered on it at a few institutions. The Johns Hopkins Medical School has a society specially devoted to it, and a small number of lectures are delivered there annually by Dr. John S. Billings. Some lectures are also delivered in Albany, St. Louis and Buffalo.

NEW YORK.

Bequest to Hospital.—The Buffalo General Hospital will become the recipient of $100,000 by the will of Mrs. Agnes Ethel Tracy.

State Examinations.—The June state examination for medical license, at Syracuse, was taken by about one hundred candidates.

Buffalo Personals.—Dr. Roswell Park, who has been ill with erysipelas, is much improved.——Dr. Marcel Hartwig is ill and confined to his home.——Dr. F. Park Lewis has been appointed chairman of the commission to investigate the condition of the adult blind in the state of New York.

Over Seas.—Dr. Lawrence Hendee, Ithaca, sailed, July 7, for Europe, where he will spend a year in study.——Dr. Montgomery A. Crockett, Buffalo, is spending three months in Hamburg, studying general surgery.——Dr. Frank A. Carr, Buffalo, has returned from abroad.——Dr. James W. Charters, Buffalo, recently sailed for a tour in Europe.

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[1] Boston Medical and Surgical Reporter, June 18, 1903, p. 657; see THE JOURNAL for July 4, 1903, ¶12, p. 56.

New York City.

A Large Estate.—Dr. Christopher M. Bell, who died in Baden Baden last year, left an estate of $2,667,000, all in personal property, according to the official appraisal just completed.

Convalescent Hospital.—On July 1 the Commissioner of Charities opened a hospital for convalescents on the north end of Blackwell's Island. There are at present accommodations for 40 men and 30 women, which will eventually be increased to 70 and 60 respectively. Ordinarily the patients will not be kept longer than three weeks.

Vital Statistics.—For the first six months of 1903 there were reported 34,855 deaths, as against 35,491 for the same period last year, giving a death rate this year of 18.67 per 1,000 as compared with a rate of 19.54 for the first six months of 1902. There is an increase of 6,000 in the number of reported births for this period, which is probably to be explained by the more strict enforcement of the law requiring the reporting of births by midwives and physicians.

OHIO.

Many Pass Examiners.—At the examination recently held, 85 applicants passed.

Smallpox in Jail.—Smallpox is reported to have developed among thirteen prisoners in the Mercer County jail.

College Consolidation.—The Miami and Laura-Memorial Woman's Medical colleges of Cincinnati have consolidated.

To Raise Curriculum.—The State Board of Medical Registration and Examination on July 8 assigned the work of deciding on a curriculum for medical schools in Ohio to a committee, consisting of Drs. Edward J. Wilson, Columbus; August Ravogli, Cincinnati; Harris H. Baxter, Cleveland, and Leo F. Towers, Toledo.

Physicians Injured.—Drs. Schuyler S. Tuttle and Richard J. Morgan, Van Wert, while journeying to Indianapolis in an automobile, ran into an open bridge and fell fifteen feet. Dr. Morgan sustained a fracture of the left thigh and patella, and of the right leg at the ankle. Dr. Tuttle fell on his head, producing a concussion of the brain from which he will recover.

Board of Appeals.—The board of appeals from decisions of the State Board of Medical Examination and Registration has sustained the decision of the board in revoking the license of Dr. Norman M. Geer, Cleveland, for gross immorality, and has reversed the decision in the matter of the revocation of the certificate of Dr. Charles F. Cookes, Columbus, charged with having performed a criminal operation, but never brought to trial.

PENNSYLVANIA.

Hospital Opens.—The Shope Hospital, Harrisburg, was formally opened July 2.

Many Candidates.—In the last week in June, 391 candidates took examinations for licenses to practice medicine, 246 in Philadelphia and 145 in Pittsburg.

Frankford Hospital Opened.—Frankford Hospital was formally opened July 4. Two physicians will be in constant residence, and, for the time being, three nurses.

Personal.—General orders announce the appointment of Dr. Sarden McClure of Philadelphia as assistant surgeon of the First Regiment, N. G., P.——The governor has appointed as a member of the State Board of Health, Dr. Charles E. Harvey, Philadelphia; as a member of the State Quarantine Board, Dr. J. L. Forwood, Chester.

Sanatorium Settlement.—Dr. J. T. Rothrock, state forestry commissioner, has contracted for the erection, on the state reservation near Waynesboro, of an assembly hall and six cottages at the White Pine Sanatorium which the state has established for tuberculosis. It is the purpose to establish a complete sanatorium settlement.

To Test Eyes.—Henry Phipps, Jr., has sent $350 to the First Ward Manual Training School, Allegheny, with a suggestion that the money be used in the examination of the eyes of the school children. He will add to his contribution a sufficient amount to secure treatment and the procuring of glasses for those who are found to need them.

Tour of Inspection.—On July 11 Governor Pennypacker, in company with state and city officials, including representatives of the state quarantine and state and city health boards, made, on a tug boat, an inspection of the Delaware River water front and of the Marcus Hook Quarantine Station. Of the party were Dr. R. A. Cleeman, president of the State Quarantine Board; Dr. Benjamin Lee, secretary of the State Board of Health; Dr. J. L. Forwood, member of the board, and City Health Officer Charles H. Heustis. The visitors were entertained at luncheon by Quarantine Physician Henry D. Heller.

Philadelphia.

Preparatory Course for Nurses.—The Drexel Institute of Art, Science and Industry, Philadelphia, has instituted a department for the preparatory instruction of nurses.

Personal.—Dr. Richard M. Pearce has been made adjunct professor of pathology and bacteriology in Albany Medical College and director of the Bender Hygiene Laboratory, vice Dr. George Blumer.——Drs. Charles B. Penrose and George A. Piersol have been appointed members of the Board of Health, vice two laymen, resigned.——Dr. Andrew J. Downes has returned from Europe.

Fourth of July Tetanus.—For the week following the Fourth of July, at least five died of tetanus, and others were reported in a critical condition from the disease. Three of the deaths were directly traceable to injury by toy pistols. The dealers who sold the pistols have been summoned to answer in court; an act of the assembly makes it a misdemeanor to sell pistols to children under fourteen.

Appointed to Professorship.—Allen J. Smith, professor of pathology and dean of the medical department of the University of Texas, has been elected to the chair of pathology in the University of Pennsylvania. The latter was made vacant by the resignation of Dr. Simon Flexner, who takes charge of the Rockefeller Institute in New York City. Dr. Smith was graduated from the University of Pennsylvania in 1886. He was for several years demonstrator of pathology in his alma mater.

Pure Food Crusade.—The crusade against impure foodstuffs made by Food Commissioner Warren, is bearing fruit. At the invitation of the Philadelphia Pork Packers' Association the food commissioner and Secretary of the Board of Agriculture Critchfield recently met representatives of the association to consider the question of impure lard. Several dealers have lately been fined for dealing in spurious lard. The packers promised the aid of their association to the commission and board of agriculture.

A Cold June.—The month of June was the coldest in Philadelphia ever recorded by the weather bureau. The average temperature was one and a half degrees lower than the coldest previous June, 1881. The minimum temperature was 51 degrees, the maximum 84 degrees. In marked contrast have been the conditions for the week of July ending the 11th. Throughout much of the days the thermometer has ranged in the 90's and the humidity has been great. As a result, there have been many cases of heat prostration, not a few proving fatal.

Improvement Hoped For.—Dr. Martin, the new director of the Department of Health and Charities, by his activity since assuming the duties of the office, has inspired a belief that the hygienic and sanitary affairs of the city are to have a much-needed improvement. Among essential innovations Dr. Martin advocates a modern system for the disposal of sewage, probably its evaporation and conversion into fertilizer; also the systematic medical inspection and examination of public school children and of public school buildings. This may be done by the regular medical inspectors of the bureau of health, or by a special corps to be appointed.

Bequests.—Among bequests awarded in adjudicating the estate of the late Owen Lamb, are the following: St. Joseph's Hospital, $500; St. Mary's Hospital, $15,734.——The following are some of the many charitable bequests made by the late Mary M. Johnson: Pennsylvania Hospital; Insane Department of Pennsylvania Hospital, for free beds; Asylum for the Relief of Persons Deprived of the Use of Their Reason; University Hospital; and Woman's Hospital, all of Philadelphia, $10,000 each; Pennsylvania Training School for Feeble-Minded Children, and Orthopedic Hospital, $5,000 each; Philadelphia Home for Incurables, $2,000, and Children's Seashore House, Atlantic City, $5,000.

Hospital Plans Stopped.—Progress in the plans for an institution in the Forty-second ward for a city almshouse and hospital for the insane, has been stopped by the department of health. An ordinance passed in the recent administration provided for the removal of this institution to said site, near the House of Correction, the land there owned by the city being about 100 available acres. The present officials regard the site as being entirely too small; they favor the separation of the almshouse from the immediate vicinity of the hospital for the insane, and the provision of large tracts of land for each institution whereby both may be largely self-sustaining, and where the insane may be treated in accord with modern methods. Plans are for the present held in abeyance.

Smallpox **Persists.**—Not only does smallpox persist in the city, but despite the warm weather and the efforts of the health authorities, seems even on the increase. For the week ended July 11, 39 new cases and 10 deaths were reported, the largest number for many weeks. The condition is so serious as to lead the department of health to renewed efforts to stamp out the disease. Vaccination, supplemented by fumigation and quarantine, is considered the one weapon of attack. Letters have been sent by the department to hospital officials asking them to refuse to admit patients who have not been successfully vaccinated within five years. Letters have also been sent to employers, asking a similar requirement of their employes, the department offering to send physicians to do free vaccination. The public has thus far failed to be aroused to a sense of the gravity of the situation, or of the necessity for general vaccination. A sentiment is gaining for compulsory vaccination. A corps of physicians have been doing house-to-house vaccination in the infected district. House inspection is being done, nuisances are to be abated, streets and alleys flushed, and garbage removed.

TENNESSEE.

Addition to Hospital.—The Presbyterian Home Hospital, Memphis, will erect an addition to the present building, to cost $12,000.

State *Medical* **Directory.**—Dr. T. J. Happel, Trenton, secretary of the State Board of Medical Examiners, is preparing a directory of all legally qualified physicians in Tennessee.

Personal.—Dr. William B. Malone, Memphis, has been appointed major and surgeon, and Dr. I. Lucius McGhee, Memphis, captain and assistant surgeon in the National Guard and assigned to the Second Infantry.——Dr. Samuel S. Briggs has been elected professor of anatomy, and Dr. George C. Savage, secretary of the faculty of the medical department of Vanderbilt University, Nashville.

State Anatomical **Board Appointed.**—The governor has appointed a board consisting of Drs. Samuel S. Briggs, Paul F. Eve, John S. Cain, Richard A. Barr, William G. Ewing of Nashville; Dr. William B. Rogers, Memphis; Dr. Walter S. Nash, Knoxville, and Dr. Edward A. Cobleigh, Chattanooga, to receive and dispose of the unclaimed bodies of persons who die in charitable and penal institutions in cities of over 40,000 population. The appointments are made on recommendation of the various colleges.

CANADA.

Brandon General Hospital.—The Brandon (Manitoba) General Hospital is to be increased by an addition which will cost $18,000 and accommodate 32 beds.

St. John, N. B., Vital Statistics.—For the first six months of 1903 there were 569 births, 457 deaths and 207 marriages in the city and county of St. John, N. B.

Royal Jubilee Hospital, Victoria, B.C.—The total number of in-patients treated during the past year in the above institution was 784; the total number of out-patients 163, as against last year, in-patients, 782; out-patients, 122. The cost of maintenance during the year was $31,831.17, while the daily cost per patient was $1.80.

New Hospital for Vancouver.—The sum of $30,000 has been subscribed for a new general hospital by the citizens of Vancouver, B. C. The city has contributed $20,000, and as a result the provincial government now announces that it will contribute $20,000 additional. A building will be erected capable of accommodating 100 patients, and so arranged that it can be enlarged at any time to provide for at least 300 patients.

Prince Edward Island Hospital.—The annual report of the Prince Edward Island Hospital shows that there were admitted during the past year to that institution 243 patients, 7 more than for the previous year. The paying patients numbered 165. The medical cases were 70, surgical 173, and 131 underwent operation. There were 183 patients discharged cured, while the deaths numbered 8, as compared with 2 during the previous year. There remained in the hospital on May 23, 16 patients. The out-patients numbered 38.

Judgment in an Eddyite Case.—The practice of Eddyism in Ontario has received a severe set-back at the hands of the Ontario Court of Appeals in the judgment delivered by that court in the case of the King against a citizen of Toronto who permitted his boy, aged 16, to die of diphtheria without providing him with necessary medical treatment. At the first trial the jury had found the prisoner guilty of manslaughter and the defendant's counsel had taken the case to the Court of Appeals. The decision of the Court of Appeals states clearly that they think that the learned judge at the first trial did properly charge the jury that the term "necessaries of life," as appears in the criminal code, includes medicine and medical treatment.

Anti-Vaccination Bill Killed.—One of the members of the Ontario legislature had before that body during the past session an anti-vaccination bill, the object of which was to remove the compulsory clause of the Public Health Act. In aid of this the legislator presented a petition signed by 1271 residents of Galt, Ont., which town had just passed through a smallpox epidemic, in favor of the bill. Dr. Reaume, a member of the legislature from Western Ontario, strongly opposed this measure and said that he had been vaccinating for 20 years, and had yet to see the first evil result. As only one or two members at the outside were in favor of the legislation the bill never saw more than its second reading.

Montreal Anti-Tuberculosis League.—A meeting of the investigation committee was held last week, presided over by Dr. Roddick, M.P. Dr. Harding, Montreal, was appointed to act as permanent secretary to the committee. A number of physicians representing the different departments of the various city hospitals and dispensaries were present and discussed with the committee the co-operation of these institutions with the league. Each and all reported that the several hospitals and dispensaries of Montreal were willing and glad to co-operate with the league in reporting cases of consumption that came under their notice. Arrangements were made by which each hospital will fully report the tuberculous cases which come under its care. This will greatly aid the league in its efforts to obtain information and give it greater opportunities in trying to stamp out tuberculosis in that city.

FOREIGN.

Damages for Venereal Infection.—The Munich courts have condemned to five months' imprisonment a postoffice employe who had established intimate intercourse with a chambermaid of good character ("ein unbescholtenes Zimmermädchen"), although he knew that he was suffering from an uncured venereal disease.

Sanatoria for the Madeira Islands.—Our German exchanges announce that the Portuguese government has granted permission to the Prince von Hohenlohe to erect the sanatoria on the Madeira islands which he has been projecting. Work will be begun at once and the government will grant certain concessions and privileges in order that the buildings may have the most favorable location and surroundings.

Organization of the Profession in Switzerland.—There is rejoicing in Switzerland over the realization of the long cherished hope of united organization of the medical profession. The general meeting held at Lausanne, June 12-14, was attended by 350 members and delegates from all parts of the country, instead of, as heretofore, each part of the country holding its separate meeting. Besides the usual excursions and clinics by prominent visitors, a number of scientific articles were read, among them one by Kocher on "Treatment of Goiter"; by His on "Articular Rheumatism," and by Bard on the "Importance of Laboratory Research for Practical Medicine."

Recent Decisions of the German Medical Court of Honor.—Among the recent decisions is one that designates as unworthy of a physician the announcement of a new remedy according to the mode of advertising addressed to the lay public, even of a remedy supposed to be of great benefit for the welfare of mankind. The court has also recently affirmed that every physician has a right to establish himself in any place he pleases. The fact that the medical practice at the place is only sufficient to support one physician does not affect this right from the standpoint of the official court of honor. In still another decision the court denounced depreciatory criticism of the testimony of another physician in a medicolegal affair. Going beyond the limits of criticism of the matter under discussion and rebuttal of the testimony of the experts on the other side, is likewise contrary to medical professional honor.

Suits Against Charlatans in Germany.—The drop curtain of the "Central Theater" in a large German City has served as the advertising medium for the charlatan Westphal, who announced on the curtain that he guaranteed a cure for the so-called incurable diseases. In the lay press he has also been publishing that a local magistrate had endorsed from the bench the value of his curative methods. The latter had merely stated in a previous suit that the defendant might possibly have accomplished a cure in certain isolated cases, but that his claim to cure all diseases was preposterous. Westphal sought to evade the law also by arguing that the use of the term "so-called" incurable did not include the actually incurable. He was condemned to a fine of $50 for the use of the magistrate's name. Another charlatan has been recently condemned to six weeks in prison for personal injury from his practices in a certain case.

LONDON LETTER.

Acute Recurrent Hydronephrosis.

At the Clinical Society of Manchester Dr. Arnold W. W. Lea read a paper based on four cases treated by operation. The condition is marked by recurrent attacks of acute abdominal pain with severe constitutional disturbance, and is associated with rapid swelling of the kidney and temporary hydronephrosis. It may be found with mobile kidney, but extreme mobility may exist without any hydronephrosis. Mr. Bruce Clarke in 1893 described this condition as "acute renal dislocation," the kidney slipping down below the costal margin. In the cases described by Dr. Lea reduction of the kidney, even under an anesthetic, was impossible owing to the greatly increased size of the organ. The cause of the condition was temporary ureteral obstruction. Slight degrees of ureteral obstruction are common in mobile kidney, producing some hydronephrosis, but in the acute cases an additional element is introduced, namely, sudden kinking or torsion of the ureter. Valvular folds are frequently in the upper part of the ureter near the renal pelvis. Sometimes also strictures occur from various causes. Reference was made to an interesting paper by Bary of Paris, who had examined the ureter and renal pelvis of a large number of newly-born infants. Among 68 cases only 15 were found in which the ureter was absolutely normal; valvular folds, narrowings, and kinking or torsion to some extent were present in 31 cases. These arose in the wall of the ureter itself. The pelvis of the kidney also showed great variation in size and shape and the angle of insertion of the ureter might be vertical or horizontal. The form most liable to lead to hydronephrosis is a voluminous renal pelvis, with the ureter entering at an acute angle. Sudden strain or effort may then produce obstruction of the ureter and hydronephrosis. Other factors, such as congenital stenosis, valves, and twists, also conduce to the production of recurrent hydronephrosis, so that this condition is largely dependent on the disposition of the ureter and renal pelvis. In these cases slight descent of the kidney, not recognizable clinically, may lead to acute ureteral obstruction. The symptoms might be very severe. In one case the attack came on at frequent intervals without obvious cause, and was accompanied by intestinal obstruction due to displacement of or traction on the colon. A distinct tendency exists for the attack to occur just before the menstrual period. This occurred in two cases and may suggest a pelvic cause for the symptoms. The attack may last 3 to 5 days, and then within a few hours the kidney may return to the normal size and all the symptoms disappear. In the intervals the patients may be well, but they are usually neurasthenic and have constant aching in the loin. The diagnosis is easy if a definite tumor can be felt, but in the earlier stages of ureteral obstruction with dilation of the pelvis the symptoms may be very severe, even in the absence of any definite tumor. The treatment must be mainly surgical; palliative measures rarely effect a cure. The kidney must be exposed. In the great majority of cases nephrorrhaphy effects a permanent cure. In slight cases it is unnecessary to drain the renal pelvis; if, however, the kidney is hydronephrotic, the pelvis must be incised and a careful examination made of the upper end of the ureter. If no obstruction is found, the pelvis may be sutured and the kidney fixed. Nephrorrhaphy is carried out by Dr. Lea in all the cases; in three the pelvis of the kidney was opened, and in one it was thought advisable to drain for a few days. In each case a permanent cure was obtained. It is important not to delay operation too long, as otherwise the kidney may be irretrievably damaged. There is also a great tendency to development of pyonephrosis from ascending from the bladder, or possibly from adhesions forming between the colon and the perirenal tissues.

Trypanosomiasis in Africa.

Drs. J. E. Dutton and J. L. Todd of the trypanosoma expedition of the Liverpool School of Tropical Medicine have just returned to England from Senegal. They especially devoted their time to research work, with a view to determine the frequency, incidence and distribution of "trypanosomiasis" in the territory of the Gambia and the adjoining French colonies. They found that the disease occurs frequently in both Europeans and natives, and that it is distributed from the sea to the Upper Gambia. The disease is caused by a parasite, trypanosoma, very similar to that which engenders the "tse-tse fly disease." Besides the human disease in the Gambia there is, in addition, a species of "tse-tse fly disease" which attacks horses, and is the chief cause of the great mortality of horses in that country. The expedition reports a very important fact with regard to the health of the Gambia, namely, that the principal medical officer of that colony had officially announced that since Sir George Denton and his medical staff have organized mosquito destruction and similar sanitary measures in Bathurst there has been a most marked reduction in diseases of the malaria type, both in Europeans and natives.

The Care of Children's Teeth.

At the annual meetings of the British Dental Association, the president, Mr. Walter Harrison, in his opening address, said that he deplored the apathy shown in the dental condition of the young. There was anxiety on the part of parents of the upper and middle classes regarding the state of their children's teeth and the principals of schools also showed that they were not indifferent in this respect; but public bodies did not realize how absolutely necessary to the health was a perfect set of teeth. The association was in a position forcibly to demonstrate the necessity of a royal commission to inquire into the condition of the teeth of poor children.

Death of Mr. William Cadge.

One of the most famous of the provincial surgeons of England has passed away at the advanced age of 81, "Cadge of Norwich" as he was called throughout the medical world. His active work had long been finished and he was simply a connecting link with the past. In 1845 he passed his examination for membership of the College of Surgeons, and became Liston's assistant, with whom he worked until his death in 1847. He next became demonstrator of anatomy in University College and contributed the article "The Surgical Anatomy of the Head and Neck and Upper Limbs" to "Morton's Surgical Anatomy." In 1848 he obtained the Fellowship of the College of Surgeons, and in 1850 was appointed assistant surgeon to University College Hospital. In 1852 he returned to Norwich, where he had received his earliest medical education, and was appointed assistant surgeon to the Norfolk and Norwich Hospital. The great prevalence of urinary calculus in the district gave him an almost unique experience of the condition which he put to such excellent use as to establish a reputation throughout the world. He was not only a most expert lithotomist but a scientific investigator of the first rank. He attributed the striking absence of stone in the children of the well-to-do to the fact that they drank milk. On the other hand, he blamed the strong, sweet, new beer which the Norfolk peasants drink liberally. He was disposed to believe that the hard water of Norfolk favored the production of stone. He had great success with lateral lithotomy, and consequently valued the operation highly. In his Hunterian lectures delivered at the Royal College of Surgeons in 1886 he stated that he had performed lithotomy 169 times with 29 deaths. In the 29 fatal cases the average age was 60 and average weight of the stone 2 oz. For large stones he preferred the suprapubic method, especially for the hard uric acid stones of his native country. Though an experienced and expert lithotritist he would not admit the claim of many surgeons that lithotomy should be abandoned. In 1880 he was elected member of the council of the College of Surgeons, a post which he held for 16 years. He presented two munificent donations to his hospital, $50,000 in 1889, and the same sum again in 1899. He was married to a sister of the late Sir Richard Quain, who predeceased him and left no children.

Correspondence.

The Demise of the Philadelphia Medical Journal.

PHILADELPHIA, July 11, 1903.

To the Editor:—In your issue for July 11 there appears a letter from Dr. George M. Gould in which, as is usual with him, he undertakes to point morals. As a pointer of morals Dr. Gould has acquired that facility which comes from a contemplation of the sins of others rather than from a serious inspection of his own faults; and it is, therefore, wholesome and right that one of his friends should hold the mirror up to his gaze. As a friend of the editor of *American Medicine*, and as the one who took the editorial chair after his enforced retirement from the *Philadelphia Medical Journal*, I greatly regret that Dr. Gould should have missed seeing the true significance in the passing of the latter journal while the former is still permitted to exist.

Those who are perfectly familiar with the inside history of the *Philadelphia Medical Journal* can trace its misfortunes to two main causes which existed at its very organization: 1. The selection of Dr. Gould for editor. 2. The permitting the stock to fall into the control of a newspaper publisher who failed to agree with Dr. Gould and forced his retirement. Between this upper and nether millstone the journal came near being torn to pieces, and it was only by the efforts of some physicians and laymen of the highest character that the journal was temporarily saved. It is a mistake on Dr. Gould's part, however, to suppose that the differences between himself and everyone else were entirely ethical, and that he was in the right and everyone else was in the wrong. The differences were not entirely ethical, but were largely temperamental and were such as grew out of the fact that some otherwise very worthy men were not able to get along with Dr. Gould. That "commercialism"—about which the editor of *American Medicine* talks with the ease of one perfectly familiar with it—was not the only or chief cause of difference between Dr. Gould and the majority stockholder, is amply proved by the fact that no sooner did he establish *American Medicine* than he adopted a commercial policy more flagrantly offensive to the ethical sense of the medical profession than was ever followed by the *Philadelphia Medical Journal*. In this respect, indeed, he proceeded to out-herod Herod.

The truth of this assertion is proved by a glance at the advertising pages of *American Medicine*. Proprietary nostrums are admitted to an extent that shows the dependence of the journal on its advertisers, and, worse than all, a special advertising department has been maintained in which Dr. Gould publishes puff articles of proprietary medicines printed in such a way as to look exactly like original articles. I know of no reputable journal in America that does such a thing as that. Neither does he disguise that he is responsible for the business as well as the editorial conduct of his journal. These things being so, if Dr. Gould has the slightest sense of humor, he must be getting more fun out of the situation than are some of his stockholders. According to an old monkish legend St. Denis, after he was beheaded, went about carrying his head in his hands. Dr. Gould emulates the example of this holy man. Ever since he was decapitated he has gone about exhibiting his disjointed head as though it were the casket of all the virtues. So far as learned at this writing, however, he has not yet paid 5 per cent. on his stock.

When I assumed editorial charge of the *Philadelphia Medical Journal* I found that all the virtues had not departed with the enforced retirement of Dr. Gould. On the board of trustees were such men as Dr. James Tyson, Dr. J. C. Wilson, Dr. William Thomson, Dr. E. Sajous, Dr. J. B. Roberts, Dr. J. H. Musser, Dr. H. Leffmann, Dr. W. Pepper, Jr., Dr. J. Neff, and Dr. Coplin; while among the friends of and contributors to the journal during the time I edited it, were such men as Professor Keen, Professor Osler, Professor Welch, Professor J. Wm. White, Dr. Louis Starr, Dr. Mills, Dr. Dercum, Dr. Sinkler, Dr. J. B. Deaver, Dr. Joseph Price, Dr. de Schweinitz, Dr. Randall, Dr. E. P. Davis, Dr. F. P. Henry, Dr. Frazier (dean of the University of Pennsylvania), Dr. Edward Martin, Drs. Dana, Starr, Sachs and Spitzka of New York, Dr. Putnam of Boston, and Dr. Jelliffe, editor of the *Medical News*. Surely among these names are to be found the names of some men who can be credited with an adherence to high ethical, literary and scientific standards!

The *Philadelphia Medical Journal* went out of existence "in the city of its birth" because the members of the editorial staff found that they could not control its policy against a small coterie of majority stockholders, and because they preferred to see it die rather than pursue a commercial policy, such as now characterizes Dr. Gould's journal. It is because Dr. Gould has failed to see the true moral of this tale, or the true handwriting on the wall, that I have thought it worth while to call his and the world's attention to it.

James Hendrie Lloyd.

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PORTA'S EXPERIMENTAL RESEARCH ON LIGATURE OF THE ARTERIES.

Ogden, Utah, July 7, 1903.

To the Editor:—Will you kindly inform me through The Journal, the nature and results of Porta's experiments on ligation of the aorta? I find references to them in several works, but none of them give any details. H. B. F.

Ans.—One of the gems in medical reference libraries is a handsome folio published in Italian at Milan in 1845 by L. Porta,* professor of surgery at Pavia. It contains 439 pages with a number of plates. In it he reports 600 experiments on 270 animals, including rabbits, dogs, sheep, goats, horses, asses and beeves, but principally on dogs, as he considered their physical organization as resembling most closely that of man. He reports the details of 113 experiments, undertaken to determine what becomes of a ligature left on an artery, and what changes are induced in the artery and in the circulation by ligature, single, double or over a cylinder, or torsion of an artery. He also reviews 600 operations undertaken on man at that date in which an artery had been ligated or twisted, studying closer the 49 cases in which gangrene occurred and the 30 deaths out of the 75 cases with hemorrhage. In his experiments he ligated the carotid, subclavian, brachial, femoral and abdominal aorta. Out of 60 animals on whom the latter artery was ligated, 7 survived, and Pirogoff had 2 survive out of 17. He speaks a good word for torsion of the artery in place of ligation for the treatment of wounds of medium sized arteries. He applied it in 18 clinical cases, generally after amputations, etc., on the basis of the results of 60 experiments on large animals in which hemorrhage occurred in only 11. He found it simple, easy and certain for the majority of his cases of wounds of the carotid, subclavian and femoral arteries, twisting them six or seven times on their axis.

GRATUITOUS SERVICES TO A PHYSICIAN.

New York, N. Y., July 9, 1903.

To the Editor:—Will you kindly advise me in this matter? Dr. A. is suddenly taken very ill, so that he can not choose his medical aid. His family under great nervous strain call in the first physician found at home, Dr. B., who does not know Dr. A. personally. He treats Dr. A., and makes two calls altogether. A few days later Dr. B. sends a bill "for services rendered to son" to Dr. A.'s father. How is Dr. A. to behave in the case? L. H.

Ans.—Article II, Chapter 2, of the Principles of Medical Ethics of the American Medical Association says:

"All practicing physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near them."

Were we in Dr. A.'s place we should first pay the bill rendered by Dr. B. and then send him a copy of the Principles of Medical Ethics of the American Medical Association with the above paragraph marked in blue pencil.

SOLUTION OF NITRATE OF SILVER.

Toledo, Ohio, July 3, 1903.

To the Editor:—I noticed in The Journal an editorial on Fourth of July injuries in which bichlorid, 1 to 1000, is advised as a cleansing solution. Pepper's *Practice* says silver nitrate, 1 to 1000, destroys germs in five minutes. Can you tell me whether this silver solution is generally looked on as efficient? J. L. T.

Ans.—A solution of nitrate of silver, 1 to 1000, is an efficient germicide, but not applicable as a general irrigating fluid.

Miscellany.

Removal of Birth-Marks.—Dr. L. L. McArthur described, at a meeting of the Chicago Surgical Society, a method which he believes to be new for the eradication of vascular blemishes of the integument. As the red color of these marks is due to capillary dilatation, it is necessary to obliterate the capillaries. To do this he conceived the idea that if, on a plane horizontal to the surface on which this pigmented area rested, a section was made of the integument in such a way that the entire thickness of the integument would not be destroyed, but that the knife should pass through each capillary loop as it came to the surface, he would then have integument still enough intact to prevent actual perforation of the same, with projection of the connective tissue beneath. After waiting for coagulation of the blood in these cut capillaries, a thin Thiersch graft was applied; all of these cut capillaries would then be obliterated, being plugged with blood-clot, which, becoming organized, would simply destroy the pigmented appearance of such a mark. Eighteen months ago a young woman presented herself with a very pronounced mark that extended over the forehead from the scalp to the eyebrow, including the eyebrow, the upper eyelid, and a portion of the malar prominence of the cheek. He adopted such a method as he described on a surface which had already received electrolysis and various other methods for the destruction of the vessels and color without avail, and succeeded in obtaining an excellent result. The patient was exhibited.

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* Delle Alterazione Patologiche delle Arterie per la Legatura e la Torsione.

Education Preliminary to Medical Study.—The *Mississippi Medical Record* says this is a matter "of primary and paramount importance, and it is to be regretted that Dr. Billings did not emphasize the evils of the course pursued by many of our so-called reputable colleges even more forcibly. The reason the 'mortality rate' at examinations by our state boards is so high is easily accounted for when we find that fully one-half of the applicants are almost totally ignorant of the rudiments of English grammar and do not know the meaning of many of the simplest words of our ordinary language. We do not expect that the medical schools will ever require a college diploma as a requisite for entrance. It is not necessary, as many of our ablest practitioners are living witnesses. But it is pitiful in the extreme to see how far some of our schools descend in their eagerness to get patronage. Why can not we help? Most students, especially in our country districts, have preceptors and these gentlemen, despite the insinuation of a recent 'Fable' of Mr. Ade, do aid their students very materially in their choice of and preparation for their medical colleges. Can not these preceptors impress on their students the advisability of devoting their spare time to the acquirement of that general knowledge that will be of real benefit to them, not alone during the college course but throughout their entire lives, rather than to set them digging aimlessly into the primary branches and laboriously acquiring a few unimportant facts that they would take up 'by absorption' during their first course if their minds were better fitted to contain them?"

Medical Centenarians.—Picard writes an interesting historical sketch of this subject in the *Gazette Méd. de Paris* for April 4 and 11, reviewing also the life insurance and other statistics in regard to "when and how physicians die," quoting extensively from THE JOURNAL. Hippocrates, he states, is said to have lived 104 years, and 140 is ascribed to Galen by one enthusiastic historian, but not by others. Three Arab physicians are cited as centenarians, and Picard has found records in France of four before Patenôtre, who died in 1709, aged 103. Poncy, who died at Paris in 1724, was born in 1623 and practiced to 100. Politiman is another French physician who lived into his second century—his biographer states to 140—and was in the habit of getting tipsy every evening, as also Dr. Espagno, who died at 112. A portrait of a Dr. P. Defournelle, inscribed 1690 to 1810, is preserved at Paris, but the first official record of a medical centenarian in France is Dr. A. Chaule, born in 1741, who lived to be 103, followed by Dr. Fau, also 103. Dr. Zalewski's death notice recorded at Bordeaux credits him with 111 years, and states that he was born in 1780, but no official record of his birth has been found. Dr. Bossy, who died at Havre in 1897 at the age of 104, was in such good health to the last that he made a trip to London three years before. His grandfather was 99 at the time of his death, and his father 108. The latter died at London in 1848 and had always enjoyed good health. Dr. Jean David of Montpellier celebrated his 102d birthday, February 10, 1903. He retired from active practice at 98. Picard has found four medical centenarians among the English members of the profession of the last century and five in this country. The latter are Dr. C. Smith, Cairo, Ill., and New York, who is said to have married at 123; Dr. D. Burke, Washington; Dr. H. Courtnay of Hancock; Dr. W. B. Sprague, and Dr. O. S. Taylor of Auburn, N. Y., concluding with Dr. C. Graham, whose centennial was celebrated by a banquet mentioned in THE JOURNAL in 1884, p. 549. Dr. Mavrogenis was a Greek physician, who attained the age of 100 in 1898, and a Swedish physician, Dr. Ivervex, is said to have invented an elixir which enabled him to live to 104. Only two Italian medical centenarians are mentioned and both died in the eighteenth century. A. Dr. O. Kownasky in Russia is said to have served in the Napoleon wars and died in 1887, aged 109. He was paralyzed for sixteen years before his death, but continued his practice to the last. It is said that he dictated a prescription a quarter of an hour before he died. In Spain Dr. F. Verdugo lived to be 105, practicing at Salamanca for eighty years, until his death in 1867. Another Spanish colleague was mentioned in 1875 as 105 years old, living in good health with a wife of 103. Dr. David, above mentioned, seems to be at present the dean of the profession the world around. Picard hopes to hear from others in regard to medical centenarians, as he would be glad to render his compilation as complete and accurate as possible. Communications addressed to him, M. L. Picard, care *Gazette Méd. de Paris*, 93 boulevard St. Germain, VI, Paris, will be thankfully received. He cites his authorities in detail, with extracts.

Book Notices.

A TEXT-BOOK OF LEGAL MEDICINE AND TOXICOLOGY. Edited by Frederick Peterson, M.D., Chief of Clinic, Nervous Department of the College of Physicians and Surgeons, New York; and Walter S. Haines, M.D., Professor of Chemistry, Pharmacy and Toxicology, Rush Medical College, in Affiliation with the University of Chicago. Cloth. Pp. 750. Price, $5.00. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

This is the first volume of a system of legal medicine, rivaling, if not exceeding, in size the earlier one edited by Hamilton. Like the latter it is a composite production, and in this first volume we find the names of a number of well-known authors as contributors, such as Drs. Smith Ely Jelliffe, Ludvig Hektoen, Graeme M. Hamilton, Chalmers Da Costa and the late Dr. J. T. Eskridge, as well as the editors, whose well-known work in their departments has made them authorities. The articles are well written, as might be expected. The editors have made but little change in the work of their contributors, desiring them to retain the responsibility for their statements, a matter of some importance in medicolegal proceedings. They have followed the usual English standards of weights and measures throughout the work and the nomenclature and spelling of the U. S. Pharmacopeia. The volume covers the subject of expert evidence, postmortem examination, identity, signs of death, death from other causes, wounds, burns, railway injuries, medical jurisprudence of life and accident insurance, vision and audition in their medicolegal aspects, disorders of speech, inebriety, stigmata of degeneration, insanity, idiocy and mental perversion of sexual instinct. The contents of the succeeding volumes are given, which is a matter of convenience to the possessor of this volume. The work is illustrated wherever it seems necessary. The publishers have done their part, as usual, in an admirable manner. The book will fill a place in medicolegal literature, and, if we are not mistaken, will soon be recognized as a standard.

CANCER AND OTHER TUMORS OF THE STOMACH. By Samuel Fenwick, M.D., F.R.C.P., Consulting Physician to the London Hospital, and W. Soltau Fenwick, M.D. Lond., M.R.C.P., Senior Physician to the London Temperance Hospital. Cloth. Pp. 362. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1903.

The major portion of this volume, as was to be expected, deals with cancer of the stomach. The work is almost entirely a statistical one. A large number of cases collected from various sources have been carefully analyzed and much interesting and useful data presented. The authors recognize three varieties of carcinoma of the stomach, namely, the spheroidal cell, including the hard or scirrhus and the soft or medullary; the cylindrical cell, or adenocarcinoma, and the colloid. The modern theories concerning the etiology of cancer are not mentioned, but this phase of the subject is handled, as are the others, in a statistical manner under the headings of Fre-

Prescott, Boston; secretary, Dr. George S. Whiteside, Boston, and assistant secretary, Dr. John G. W. Knowlton, Roxbury, Mass.

New York State Medical Association, Third District Branch.—The nineteenth annual meeting was held in Syracuse and Onondaga Valley, June 25. A new by-law was adopted which states in substance that the council shall hereafter, in compliance with the conditions specified in the article, assume the defense of suits of alleged malpractice brought against members of the society. The council will not undertake the defense of suits brought against a member previous to his membership, and any member wishing to avail himself of the privileges of the article must first sign a contract renouncing his own and vesting in the council sole authority to conduct the defense of said suit in any manner in which may be considered fit. The council will not, however, feel obliged to pay damages in case such are declared by the court. Dr. Frank W. Higgins, Cortland, was elected president; Dr. Franklin J. Kaufmann, Syracuse. vice-president; Dr. Clarke W. Greene, Binghamton, secretary, and Dr. Frank Kenyon, Scipio, treasurer. Binghamton was selected as the next place of meeting.

Ontario Medical Council.—The Ontario Medical Council has been meeting in Toronto during the past week. It has elected for president for the ensuing year Dr. J. A. Robertson of Stratford, Ont., and the Hon. Dr. Sullivan of Kingston as vice-president. Drs. R. A. Pyne and H. W. Aikins of Toronto were re-elected registrar and treasurer respectively. The most important matter which came before the council this year was the report of the special committee on legislation, which suggested amendments to the Ontario Medical Act, which would benefit both the public and the profession. This report stated that it would be wise owing to the amount of quackery prevailing throughout the province for the legislature to clearly define what is meant by the practice of medicine. Following on this advice the medical council provided a resolution bringing these matters to the attention of the legislature. They felt, however, that it would be unwise to do anything more than call the attention of the legislature to irregular unauthorized practitioners at the present time.

MAINE MEDICAL ASSOCIATION.

Fiftieth Annual Meeting, held in Portland, June 3, 4 and 5, 1903.

President, Dr. Hiram Hunt, Greenville, in the Chair.

History of the Association.

Dr. Charles O. Hunt, Portland, delivered the historical address. Of the 82 practicing physicians who signed the roll at the first meeting in 1853, only 3 are alive to-day, namely, Dr. Alonzo Garcelon, Lewiston, now 90 years of age and still in active practice; Dr. Cyrus Kendrick, Jr., Litchfield Corners, and Dr. Nathaniel T. Palmer, Brunswick. He then sketched the history of the society, the benefits of the medical association to the practitioner, and considered its intellectual value, its fraternal and social benefits and the value of organization. The objects of the association as stated in the constitution are "Mutual professional improvements, cultivation of friendly intercourse between its members, faithful support of regular and honorable practice and the promotion of medical science." He then took up the American Medical Association plan of organization, and suggested that a committee of five be appointed to consider the plan and report at its next annual meeting.

Election of Officers.

At the morning session of the second day the following officers were elected: President, Dr. Augustus S. Thayer, Portland; vice-presidents, Drs. Frederick L. Dixon, Lewiston, and Frank L. Shaw, Machias; corresponding secretary, Dr. Albert H. Sturtevant, Augusta, and treasurer, Dr. Arthur S. Gilson, Portland.

Historical Papers.

Dr. John L. M. Willis, Eliot, read a paper on "The History of Medicine in Maine Prior to 1853," and Dr. Willis B. Moulton, Portland, one "On the History of Medicine in Maine Outside of the Association Since 1853." In 1860 Maine, with a population of 626,297, had 795 physicians and 3 surgeons—one physician to every 1,050 of the population. In 1900, with a population of 694,466, 1,206 physicians were registered—one to every 576 of the population. The increase in the population in the forty years was about 10 per cent., while the percentage of increase of physicians was more than 51.

Banquet.

The annual banquet was held June 4. Dr. Edwin Fuller, Bath, presided as toastmaster. He called attention to the presence of two of the charter members of the association, the venerable Dr. Alonzo Garcelon and Dr. Cyrus Kendick. Among the toasts responded to were those on "The Relation of Theology to Medicine," "The Relation of Literature to Medicine," "The Relation of the Alienist to the Medical Profession," "The Relation of Good Fellowship to Medicine," and "The Relation of Medicine to the Student."

Entertainment.

After the adjournment of the business session about 150 members enjoyed a sail down Casco Bay and a shore dinner at Long Island.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION.

Twenty-second Annual Meeting, held at Mitchell, May 27 and 28, 1903.

The President, Dr. J. O. Duguid of Springfield, in the Chair.

The Committee on Reorganization.

Dr. R. C. Warne of Mitchell, chairman, reported in favor of adopting the recommendations of the committee on reorganization of the American Medical Association. The report of the committee was adopted without change.

By this action the state is divided into nine councilor districts (with one society in each district). A number of excellent papers were read. Dr. H. E. McNutt gave an interesting account of the passage of our model medical practice law. A vote of thanks was tendered Drs. McNutt and J. R. Hawkins for their good services in securing medical legislation.

Election of Officers.

The following officers were elected: President, Dr. B. A. Bobb, Mitchell; vice-presidents, Dr. C. B. Mallery, Aberdeen, and Dr. J. G. Parsons, Brookings; secretary-treasurer, Dr. William Edwards, Bowdle; assistant secretary, Dr. F. M. Crain, Redfield. Councilors: Dr. Daniel Geib, Groton; Dr. E. T. Ramsey, Clark; Dr. J. E. Coulter, DeSmet; Dr. O. R. Wright, Huron; Dr. A. J. Doty, Colman; Dr. F. L. Freyberg, Mitchell; Dr. J. R. Hawkins, Sioux Falls; Dr. C. C. Gross, Yankton; Dr. W. G. Smith, Sturgis. Members of the house of delegates: Dr. H. J. Rock, Aberdeen; alternate, Dr. C. J. Lavery, Fort Pierre. Place of next annual meeting, Redfield.

The association was handsomely entertained by the citizens of Mitchell and banqueted by the Mitchell District Medical Society.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Minutes of the Thirteenth Annual Meeting, held at New Orleans, May 4, 1903.

List of Representatives.

The Association convened in the Auditorium of Artillery Hall, and was called to order at 2:30 p. m. by the president, Dr. Wm. L. Rodman, Philadelphia.

The following colleges (45) were represented by delegates:

Arkansas Industrial University Medical Department: Edwin Bentley.

Denver and Gross College of Medicine, Denver, Colo.: Thos. H. Hawkins.

Columbian University Medical Department, Washington, D. C.: Thos. A. Claytor.

Georgetown University Medical Department, Washington, D. C.; Geo. M. Kober.

American Medical Missionary College, Chicago, Ill.: E. L. Eggleston.

College of Physicians and Surgeons, Chicago, Ill.: W. A. Evans.

Illinois Medical College, Chicago, Ill.: H. H. Brown.

Northwestern University Medical School, Chicago, Ill.: W. S. Hall.

Rush Medical College, Chicago, Ill.: J. M. Dodson.

Ft. Wayne College of Medicine, Ft. Wayne, Ind.: M. F. Porter.

Medical College of Indiana, Indianapolis, Ind.: D. A. Thompson.

Iowa College of Physicians and Surgeons, Des Moines, Iowa: Lewis Schooler.

College of Medicine, State University of Iowa, Iowa City, Iowa: J. H. Guthrie.

Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa: G. R. Jenkins.

Kansas Medical College, Topeka, Kans.: W. S. Lindsay.

Hospital College of Medicine, Louisville, Ky.: P. R. Taylor.

Kentucky School of Medicine, Louisville, Ky.: W. H. Wathen.

University of Louisville Medical Department, Louisville, Ky.: J. M. Bodine.

Kentucky University Medical Department: T. C. Evans.

Flint Medical College, New Orleans University, New Orleans, La.: H. J. Clements.

Baltimore Medical College, Baltimore, Md.: D. Streett.

Baltimore University School of Medicine, Baltimore, Md.: W. O. B. Sellman.

College of Physicians and Surgeons, Baltimore, Md.: C. F. Brown.

University of Maryland School of Medicine, Baltimore, Md.: R. Winslow.

Woman's Medical College, Baltimore, Md.: H. Harlan.

College of Physicians and Surgeons, Boston, Mass.: C. M. Cobb.

Detroit College of Medicine, Detroit, Mich.: H. O. Walker.

University of Minnesota College of Medicine, Minneapolis, Minn.: J. H. Fulton.

Kansas City Medical College, Kansas City, Mo.: T. J. Beattie.

University Medical College of Kansas City, Kansas City, Mo.: S. C. James.

Marion Sims-Beaumont Medical College, St. Louis, Mo.: H. W. Loeb.

St. Louis College of Physicians and Surgeons, St. Louis, Mo.: C. W. Lillie.

Jno. A. Creighton Medical School, Omaha, Neb.: H. L. Burrell.

University of Nebraska College of Medicine, Lincoln, Neb.: H. B. Ward.

University of North Carolina Medical Department, Chapel Hills, N. C.: R. H. Whitehead.

Miami Medical College, Cincinnati, Ohio: J. Eichang.

Cleveland College of Physicians and Surgeons, Ohio: A. R. Baker.

Ohio Medical University, Columbus, Ohio: W. J. Means.

Jefferson Medical College, Philadelphia, Pa.: J. W. Holland.

Medico-Chirurgical College of Philadelphia, Pa.: Seneca Egbert.

Woman's Medical College of Pennsylvania, Philadelphia, Pa.: W. L. Rodman.

Meharry Medical College, Nashville, Tenn.: G. W. Hubbard.

University College of Medicine, Richmond, Va.: Stuart McGuire.

Milwaukee Medical College, Milwaukee, Wis.: W. H. Earles.

Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.: A. H. Levings.

The minutes of the Saratoga meeting, as printed in the proceedings, were accepted with the following corrections: (1) The minutes to show that the Kentucky School of Medicine was represented at the Saratoga meeting. (2) That the name of Dr. J. W. Chambers be inserted in place of that of Dr. Robert Reyburn at the bottom of page 6.

President's Address.

The first vice-president, Dr. R. H. Whitehead, then took the chair, while the president, Dr. Wm. L. Rodman, delivered the presidential address.

In the first place, it is my pleasure to cordially thank you for the distinguished compliment shown in choosing me as your presiding officer for this meeting. Believing that this would prove to be a critical year in the life of the Association, I assumed office with many misgivings as to my own ability to safely advise and direct the Association's affairs.

It has seemed to me best to follow the beaten paths trodden by my illustrious predecessors and spend the brief time allotted in making a few general recommendations concerning the present needs of the Association. I can not hope to say much that is new, but will endeavor to emphasize that which seems to me true. In doing so, I trust that I will give offense to none, and that I will be credited with an honest endeavor to advance the interests of this Association and to further the cause of medical education, which has ever been its prime object.

In appointing a committee at the last meeting to amend Article III of the Constitution, a judicious step was taken by the Association and one which I am sure will result only in good. The personnel of the committee should command for their carefully prepared reports the respectful consideration of all the assembled delegates. It is to be regretted, I think, that more sweeping authority was not given this excellent committee, so that other amendments, as needful perhaps as those submitted, could have been suggested. The whole constitution and by-laws should be rewritten and made to conform to the requirements of the present time. In many respects they are absolutely wanting, in others vague, and in others still the opposite of what they should be. I would, therefore, suggest the continuance of this committee in the work so well begun, with instructions to present any changes in the constitution and by-laws which may seem necessary at the next annual meeting.

I am pleased to announce that the deficit existing at the last meeting has been entirely liquidated and that there is a sufficient balance in the treasury to meet the Association's obligations during the current year. It could not have been possible, however, without raising the membership fee to ten dollars. This very necessary change will save the secretary many annoyances of a financial nature in the future, and insure, among other things, the prompt publication of the minutes of our meeting. Moreover, a fund will soon be created which can be still further increased, if necessary, by direct assessment to provide for the inspection of all the schools members of the Association. Such a step now seems to me necessary, and I would recommend that the secretary be requested to make, or cause to be made, an examination of the plants and equipments of all the colleges forming the Association, and to report thereon as soon as practicable. By taking one-third of the schools each year, a perfectly satisfactory examination could be made as to their didactic, clinical and laboratory facilities, and the result of such examination be reported on fully at the next annual meeting. Such an examination and report would do more, in my judgment, than any other step that could be taken. Poorly equipped institutions would be slow to seek admission into the Association if they were required to pay the expenses incident to a proper examination of their plant and to abide by the result of such a report made to the Judicial Council. It is easy to comply on paper with all necessary requirements. Some attempt at least should be made to hold schools responsible for what they advertise. This, seemingly, is the only way of doing so.

Membership in this Association has been like salvation, entirely too free in the past, and it can not be denied that the stronger and better schools holding membership are more than restive under the careless admission of some and the continuance in good standing of others that have sinned grievously and palpably. What we need is not more members, but better ones, so that schools seeking admission will do so because it will be both a credit and an honor to belong to the Association of American Medical Colleges, and not as is true now of some, simply for the reason that it is to their commercial advantage to do so. I am neither optimistic nor Utopian enough to believe that all the members of this Association can be of equal merit, any more than can all men or all practitioners of medicine. This is unnecessary. It is the privilege of the strong to support the weak so long as they deserve it, but it is not the duty of those who are virtuous and support the law to shield those who voluntarily transgress it. The Association fixes a minimum standard and pretends to require that all of its members live up to their obligations. They are not doing it, and everyone in this audience who is advised knows it.

JUDICIAL COUNCIL.

That many schools have sinned in the past is to be inferred from the promptness with which unanimous verdicts of the Judicial Council have been set aside by the Association when charges have been both sustained and admitted. We should either support the Council when we believe it to be right or do away with the farce of mock trials altogether. We should not allow the good fellowship of teachers to excuse glaring faults in the schools they represent, a sin easily committed. The work of the Judicial Council is tedious, and somewhat disagreeable, and those who are willing and capable of serving the Association in this capacity should be supported in all reasonable recommendations. They will always give the accused the benefit of doubts, and the Association can add something to their leniency if it seems best; but to deliberately set at naught the verdicts of a unanimous jury would hardly be countenanced by the most lenient of judges.

FEES.

This body has in the past declined to recognize or discuss the question of fees. So far as fixing a minimum rate, as is done by the Association of Dental Colleges, there are, I admit, two sides to the question. Personally, I favor it and think the time has come to say that no school holding a cheap estimate of its own work shall become a member of this Association. But as to another question, namely the reduction of fees under one pretense and another, there is but one side. This, to my mind, from verbal and written evidence, is the greatest evil from which the Association is now suffering. It can only be stopped by saying that all members shall live up to their published announcements and collect the amounts specified in their catalogues. While I am strongly in favor of a minimum charge of one hundred dollars, and consider this sum really less than a first-class course in medicine can be had for at the present day, still I would be willing to say, let a school charge whatsoever it may please, but require that it collect that amount, and collected in money and not in services or any other questionable way. So flagrant have been the transgressions along this line that it is believed by many that a sufficient forfeit evidencing the good faith of the institution should be required of every member of the Association. I see much in the suggestion to warrant its trial, and believe that it would certainly have a repressive influence if it did not absolutely prevent this blighting evil.

SCHOLARSHIPS.

Some schools have shown scant regard for resolutions hitherto passed by the Association in reference to scholarships. This is an evil parallel to the cutting of fees and should, so far as possible, be eliminated.

TRANSFER OF STUDENTS.

While the constitution is clear enough as to the privileges of members to deal with the students of other schools at the beginning of a session, it has nothing to say on the important question of transferring students in the midst of a term. Undoubtedly this is a subject demanding attention. It is a practice to be discouraged in the main, for nearly always the student wishes to change schools during a term for reasons altogether selfish and discreditable to himself. Occasionally the right will be on his side, and if his record has been good, if all reasonable requirements have been met and the Dean will so certify, there is no just ground for refusing him admission to the same class in another school. It should be made impossible, however, for any work of importance, didactic, clinical or laboratory, to be evaded.

THE ADVANCED STANDARD OF ADMISSION.

There is a pretty general feeling, and it is frequently expressed, that this Association must advance its standard at the present session or it is in great danger of going to pieces. A spirit of magnanimity has been shown for some years by schools whose standards are in many respects ahead of the Association's requirements in the hope that an advance could be made with the hearty co-operation of nearly if not all members. This hope, I trust, has not been illusory. There has been little or no advance made in the Association's requirements since 1895, a long time in this somewhat remarkable era of progress. The result of it is that the Association, which was at one time the leader in medical education, now finds itself led by nearly all of the progressive commonwealths of the country. We are in a position that simply can not and should not continue. I have the greatest sympathy and respect for a small school with no endowment and moderate equipment endeavoring to and succeeding in doing excellent work, though sandwiched in between strong schools on one side and inferior (low grade) ones on the other, such a small school naturally may be slow to favor an advance, fearing that it will suffer thereby. But the fact of the matter is that in the past none of us has ever suffered as much by advancing the standard, as we feared, and do what we will there seems every year an increasing number of students that must go somewhere. There is, moreover, a better appreciation of the small, select school at the present time than ever before, on account of the superior clinical facilities offered toward classes and to sections in the laboratories. Large classes can not be handled so well now as formerly, and this fact is keenly appreciated by medical students. Therefore, it would seem that the best way for any school of precarious existence to increase its matriculation list is by advancing its standard and increasing its facilities. Every year it seems to me that students get to be more discriminating, and certainly every year there is a greater tendency for the better ones to shift from one school to another. One year ago I insisted that our faculty raise its fee to $150, and at the same time made it impossible for any reduction to be given on any account whatsoever. It was feared that it would seriously curtail our freshman class of 1902, yet it was much the largest we have ever had. (To those who can not see things in this light and believe that their schools can only continue under the present standards, I can only say that the way for honorable withdrawal is open to them, and while we should regret to see a single member of the Association leave it, we should prefer that many would go rather than see the Association refuse to do what all of the better schools want and ask for, and an overcrowded profession demands.) No one will deny that there are too many schools and too many practitioners in this country; there are more schools in one city than in the entire Empire of Russia.

How shall the standard be raised? First, the entrance requirements must be raised. Second, no advanced standing should be given to any one having a degree, unless it is demonstrably equivalent to the freshman year in medicine. Third, the session should be lengthened. Fourth, mid-year examinations should be encouraged. No one will question that the requirements for matriculation are far below what they should be. The time has come when this Association can not maintain the respect of the profession and the several state boards of examiners unless it requires a high school diploma, or its equivalent, of matriculants in a medical college. I am not prepared to go so far as the committee and demand that the diploma be from a four years' high school; for, desirable as that is, I fear that it would be requiring more than is feasible or right. In the State of Pennsylvania, for instance, there are 193 high schools, more than two-thirds of all the high schools in the entire state, with less than a four-year course. If such is the case in Pennsylvania, which is certainly one of the oldest, wealthiest, and most favored commonwealths, the conditions are not likely to be better in many states of the Union, but in most of them actually worse. It is not equity, I admit, to put on the same footing men with two, three and four-year high-school diplomas, and it is discriminating against the city boy who will necessarily go to the best high schools with the longest courses. If there must be a favored class it should be the country boys or those from small towns, for, as a rule, they begin school later, have less means, and finally will in all probability settle in the country, where less is required and expected of them. The boy raised in the city is pretty certain to remain there, where competition is sharpest, and he should, therefore, be prepared for it in every possible way.

To say that we will require a high school diploma without qualifications will, I think, be an enormous gain, and as long a step forward as the Association is willing to take. Personally, I favor the four-year diploma, but if we can get to that point in three or five years as an Association representing so many of the states, we will be doing very well. It is only fair to give reasonable notice that such rigid requirements will be enforced so that boys contemplating the study of medicine can prepare for it by taking a four-year high-school course. Therefore, I should say, advance at once to a high school diploma, and in either three, or at most five years, require a four-year diploma or its equivalent. An examination as outlined by the committee in lieu of a diploma should always be permitted. It is unfair and undemocratic to say that every matriculate must be the possessor of a diploma. If he has the knowledge entitling him to one, that is sufficient, and there may be the best of reasons why a student in every way worthy failed to get his degree. A bill, excellent in many respects and deserving of support, lay and professional, failed of passage by the recent legislature of Pennsylvania because it did not provide for an examination of those who were self taught, or at least without diplomas. It passed the lower house by a large majority and undoubtedly would and should have passed the senate but for this unfortunate and fatal omission.

ADVANCED STANDING.

The report of the committee appointed recommends "that credit for one year be given to students holding the degree of A. B., B.S., or other equivalent from a reputable university or literary college." The minority report would withhold advanced standing to those with baccalaureate degrees. I should prefer to take a middle course and grant advanced standing only to those who have specially fitted themselves for the study of medicine. No other course, in my judgment, so well prepares one for a professional career as a two or three years' course in the biological sciences. I have never favored the idea of granting advanced standing for any cause whatsoever, and have believed it best to require four years in a medical school. I am quite sure, and in this belief nearly all concur, that it was a mistake to give a one-year credit to dentists, pharmacists and veterinarians; a majority of the schools have discontinued the practice. I have never known of many instances where such students were not greatly handicapped throughout their entire medical career. It would seem that there is less reason for giving one year's credit to a student with an A.B. degree. Under this ruling many schools are still granting advanced standing to even high school graduates, and are really giving only a three years' medical course. It was never, I think, contemplated by the Association that the present law would be so construed, but that it has been made very elastic, and an excuse for a short cut to a diploma in many instances, there can be no doubt. It may be safer, as the author of the minority report says, to give no advanced standing to any one, but in lieu thereof to allow credit for work actually done. This is the ideal method, I admit. Practically, however, we find the biological courses in most of the eastern colleges quite the equal in every way of the freshman year in medicine, and students with such degrees easily take their places in the sophomore class and acquit themselves creditably. I have never known one to fail in the final examination before his faculty, or before a state board. Such has also been the experience of Jefferson College. Such students come with a disciplined college training and, moreover, have what all others claiming advanced standing have not, a good knowledge of anatomy, both comparative and human. I know that the presidents of all the colleges in Pennsylvania have shown great interest in their biological courses and have designed them especially for those intending to study medicine. More than two years ago, when they were all invited to take part in a discussion before the Philadelphia County Medical Society, the subject of advanced standing being then a live one with the medical schools of Philadelphia and the Pennsylvania State Board, a good account was given by the colleges represented, and most of us were surprised at the completeness of their biological courses. Since then the schools of Philadelphia have not hesitated to admit such students to advanced standing, though denying it to all others.

LENGTH OF TERM.

I heartily endorse the recommendation of the committee that this Association require as a minimum a seven months' term. Some of the best schools require nine, more eight and all should require at least seven months. The very proper action of the several state boards of examiners in demanding longer terms has made this advance absolutely unavoidable. I should prefer to see the term eight months instead of seven, as some of the state laws require it now, and others will do so very soon. This Association should lead and not be driven.

MID-YEAR EXAMINATIONS.

The time has come when this Association should encourage, if not require, mid-year examinations in writing, as is done by nearly all of the best literary colleges. Our frequent quizzes are all very well in their way, but do not prepare students for their examinations before state boards, which are invariably in writing. Men only learn to write good papers by practice, and if they were required to undergo written examinations twice a year instead of once, it is reasonable to suppose that by the end of their senior year they would present very much better papers and appear to greater advantage before the several state boards.

Every year I find the papers of the senior students much better in construction, spelling, etc., etc., than those of the juniors, which I can only explain in two ways: First, by their larger experience in written examinations; second, by the result being of greater moment to them. If the junior fails to secure a passing mark, he is conditioned; if the senior does not come up to the standard, he fails of graduation. This naturally indicates that the final examination of freshmen, sophomores and juniors should be, what they are not, as a rule, I fancy, even more rigid than the examinations of seniors. It is fairer and more just in every way to hold up a man and let him know where he stands before reaching the senior class. It is certainly most unjust to throw out a student at the end of his senior year for either bad writing, spelling, English, or all. This should be done when he applies for matriculation, and in the event of his shortcomings not being detected then, they certainly should be at the end of his freshman year. I do not teach the freshman or sophomores but the juniors and seniors, and each year I condition in surgery three times as many juniors as I vote against seniors. It is rarely the case that a conditioned man comes up lame the following year. Moreover, they are almost invariably grateful for the warning given, and meet their fate with a philosophy that a senior can not be expected to show. From an experience in four faculties during the past fifteen years I am led irresistibly to the conclusion that the senior examinations are *about* what they should be, but the examination of underclassmen is frequently little more than a sham.

In conclusion, I should say that the most pressing and needful reforms at present necessary are an increase in the preliminary requirements before matriculation, with better teaching and more rigid examination of underclassmen.

On motion of Dr. W. J. Means, the address was referred to a committee of three to report at the evening session. The chair appointed on this committee Drs. H. O. Walker, J. W. Holland and H. B. Ward.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Gonorrheal Arthritis.

E. C. Hill, in *Med. Standard*, gives the following methods of dealing with arthritic joints due to gonorrhea, which have been prescribed by different authors:

Potassium iodid, grains 5 in a tablespoonful of water every hour or two.

Syrup of iodid of iron, dram one half, gradually increased.

Treat the focus of infection in the urethra.

Apply to the joint an ointment as follows:

℞.	Ol. terebinthinæ		
	Acidi salicylici		
	Lanolini, āā	ʒiii	12
	Adipis	℥iii	90

M. Ft. ung. Sig.: Apply locally.

An injection of mercuric chlorid solution is sometimes recommended as follows:

℞.	Hydrarg. chloridi corros.	gr. i	06
	Sodii chloridi	gr. x	65
	Aquæ destil.	℥i	30

M. Sig.: Inject three to five hypodermic syringefuls into the joint at intervals of three days; or:

℞.	Guaiacol	ʒii	8
	Olei olivæ	ʒvi	24

M. Sig.: Apply to the skin over the affected joint four times daily.

Aspiration of the sero-purulent effusion, followed by compression of the joint and fixation of the limb in immovable dressing. Massage and hot and cold douches to aid absorption.

Ozena.

Voquier, in *Jour. des Pract.*, recommends, in the treatment of ozena, that the surfaces be thoroughly cleansed and the dried crusts removed by warm douches containing sodium chlorid, sodium bicarbonate, or lysol in solution, after which one of the following ointments should be applied by means of a swab or small brush:

℞.	Menthol	gr. ivss	30
	Acidi borici	gr. xxx	2
	Liq. petrolati	℥i	30

M. Sig.: Apply locally three times a day; or:

℞.	Naphthol	ʒi	4
	Resorcin	gr. xv	1
	Liq. petrolati	℥i	30

M. Ft. unguentum. Sig.: Apply locally; or:

℞.	Diiodoformi	ʒi	4
	Liq. petrolati	ʒv	20

M. Sig.: Apply locally.

Some preparation containing iodin has always served a good purpose in these foul-smelling conditions. The iodin may be applied as follows, after applying a weak solution of cocain to anesthetize the parts:

℞.	Iodi	gr. v		30
	Pot. iodidi	gr. xv	1	
	Aq. destil.	ʒiss	6	

M. Sig.: To be applied locally by means of a cotton swab or applicator.

Aperient for Pregnant Women.

Lutaud. in *Nouveaux Remèdes*, recommends the following combination to relieve the constipation of pregnant women:

℞.	Olei ricini	℥i	30	
	Syr. rhei	ʒv	20	
	Spts. frumenti	℥ss	15	
	Essentiæ menth. pip.	m. ii		12

M. Sig.: To be taken at one dose.

Urticaria.

The *Medical World* recommends, in the treatment of urticaria, that the patient be placed on some combination containing calcium chlorid as follows:

℞.	Calcii chloridi	ʒii	8	
	Tinct. aurantii flor.	ʒvi	25	
	Aq. chloroformi q. s. ad	℥vi	180	

M. Sig.: One to two tablespoonfuls to be taken three times a day.

In addition the patient should be instructed to take a bath containing soda or borax. The elimination from the bowels and kidneys should be carefully watched.

Pertussis.

Rothrock, according to an abstract in *Med. Standard*, advises, in the treatment of pertussis, that expectorants be administered in the catarrhal stage. He recommends the stimulating expectorants such as ammonia, scilla, senega, etc. *Either the carbonate or chlorid of ammonium may be given.*

In the second stage sedatives are indicated, such as belladonna, cannabis, indica, codein, passiflora and conium. The following combinations are recommended by the author:

℞.	Tinct. belladonna	m. xxiv	1	65
	Sodii brom.	ʒiii	12	
	Syr. tolutani	℥iii	90	

M. Sig.: Five to twenty drops at a dose.

The following containing grindelia robusta is also recommended:

℞.	Tinct. grindelia robustæ	℥ss	15	
	Spts. vini rectif.	℥ss	15	
	Acetanilidi	gr. xxiv	1	65
	Syr. acaciæ	℥iii	90	

M. Dissolve the acetanilid in alcohol and add to the other ingredients. Sig.: Ten drops to a child of one year; to a child of 8 or 10, the dose may be increased to 20 or 25 drops every two hours.

℞.	Cochineal	gr. x		65
	Sodii bicarb.	gr. xii		75
	Pot. brom.	gr. xv	1	
	Tinct. belladon.	m. xv	1	
	Tinct. card. co.	ʒi	4	
	Aquæ cinnamomi	℥ii	60	

M. Sig.: Twenty to thirty drops every four hours; or:

℞.	Acidi hydrocyanici dil.	m. viii		50
	Tinct. ipecacuanhæ	ʒi	4	
	Syr. tolutani	℥i	30	
	Aquæ	℥i	30	

M. Sig.: Ten to twenty drops every three or four hours.

The author also recommends drosera as of value in relieving the paroxysm, given as follows:

℞.	Ext. droseræ fl.			
	Ext. ipecac fl.			
	Tinct. nucis vomicæ, āā	m. v		30
	Aquæ q. s. ad	℥iv	120	

M. Sig.: One teaspoonful at a dose.

Bromoform is also recommended in 2 to 4 drop doses. Ichthyol, one teaspoonful added to 4 or 5 ounces of water and used as an inhalation, is of service.

The author condemns the use of *opium*, substituting codein in doses of gr. 1/100 to gr. 1/32, according to the age of the patient.

If the patient vomits to any extent, cerium oxalate should be given, as it acts on the pneumogastric nerve.

He has obtained good results from passiflora incarnata as an antispasmodic, sedative, tonic and eliminant. It is a safe remedy *given in teaspoonful doses of the tincture every two or three hours.*

G. Macridès, in *Jour. de Med. Interne*, recommends the following formula in the treatment of whooping cough:

℞.	Bromoformi	gtt. l	3	30
	Syr. belladonnæ	ʒvi	25	
	Aq. destil.	℥iii	90	

M. Sig.: One teaspoonful three or four times a day for a child over six years of age.

Medicolegal.

Sodomy.—The Court of Criminal Appeals of Texas holds, in Almendaris vs. State, that under *a charge of sodomy, carnal* knowledge, such as is essential to the crime of rape, must be proved, though the jury may infer penetration from the circumstances, without direct proof. And the Court of Appeals of Kentucky holds, in White vs. Commonwealth, that, while the decisions have not been uniform, the drift of the later decisions in both the English and American courts is to hold that nothing more than *res in re*, without regard to the extent of the penetration or emission, is all that is required.

Insufficient Evidence of Practicing Without License.—The Supreme Court of Washington says that the acts constituting the practice of medicine charged in the case of State vs. E. Dunham were that at a certain time and place the latter "did *wrongfully and unlawfully establish and maintain an office*, and advertise the title of doctor" in a certain newspaper. No attempt at all was made to prove that he maintained an office, *and the only evidence introduced as to the other fact* was a paper containing an advertisement. Clearly, the court holds, there was here no proof of the crime charged, namely, the practicing of medicine without a license. As against the presumption of innocence, it could not be presumed from the mere fact that an advertisement appeared in a paper that it was authorized by the accused, nor would it be presumed that he was the person named in the advertisement, though the name *therein and his name were the same.*

Liability for Disease Resulting from Injuries.—In the personal injury case of Wood vs. the New York Central & Hudson River Railroad Company, *where the decline of the party suing* had been substantially uninterrupted, until consumption had supervened, ascribable to the shock and muscular strain of an accident, the Fourth Appellate Division of the Supreme Court of New York says it assumes that if there is a progressive, *complete connection between any diseases and the injuries* inflicted, such disease may be taken in estimation by the jury, as the party suing is entitled to recover for any damages which are the proximate result of the injuries. It is a matter to be determined by the jury, and the causal connection between the injuries and the *existing disease must depend in a considerable* degree on the evidence of physicians. The right to embrace in the recovery damages for an existing disease may not be lost *by reason* of the length of time which has elapsed between its discovery or inception and the infliction of the original injuries, nor on the character of the disease *The fact may be* established that the disease was the result of the injuries; that the association of the two is by a direct line; and their connection is not to be based on conjecture or speculation. If their unbroken connection is thus demonstrated, then the cause of action of the party suing may *include the disease.*

Without Contract Town Not Liable for Medical Services.—The Supreme Court of Mississippi holds, on the appeal of the Town of Pass Christian vs. *Washington, an action* brought by the latter party, a physician, to recover for services rendered in treating four cases of smallpox and preventing the spread of the disease, that the whole case failed for the want of any valid contract for these particular services with the city. After the physician's discovery and reporting of these cases, the mayor directed him to do what was necessary, and the board of mayor and aldermen made an order that he be appointed health officer of the town, and be requested to take at once the necessary sanitary precautions for the general good of the health of the town. The Supreme Court says that this order was a mere appointment of the physician as a health officer, vesting him with the usual authority with respect to sanitary precautions for the good of the town. It was in no sense a contract to treat these four smallpox patients, and no other valid contract for that purpose was shown. Without a contract, it declares, there is no liability on the part of the town. And to much the same effect is the decision of the Supreme Court of New Hampshire in the scarlet fever case of Pettengill vs. the Town of Amherst. It says that the verdict of the jury established the fact that the services of the physician suing were not rendered at the request of the town, or under any contract with it therefor. The board of health did not employ, or attempt, as statutory agent of the town, to pledge its credit for his services rendered in this case. The board did not deem it "wise or necessary" to employ him in this case *at the expense of the town*, to use the words of the statute which provides that in cases of quarantine the board may render assistance when deemed wise or necessary. Whether there was a moral obligation, under the circumstances, resting on the board and the town to provide the party in question with medical attendance during the confinement of his family in quarantine, was immaterial in this action. The town could only be liable on a legal contract, which the case showed did not exist.

Libel on Physician in Board of Health Preamble.—The Ohio case of Mauk vs. Brundage and others was brought by a physician against the members of the board of health of a village for libel in causing to be published in a newspaper: "An order to prevent and restrict infectious diseases. Whereas, the board of health of the village of Delphos, Allen and Van Wert counties, Ohio, after careful consideration, has become satisfied that in said village a number of deaths have recently resulted from the carelessness and negligence of the physician attending the patients in childbirth soon after attending and handling other patients affected by blood poison and other infectious diseases, and that from the same cause others in said village have greatly suffered and barely escaped death: Therefore, it is hereby ordered by the board of health of the village of Delphos, Allen and Van Wert counties, Ohio, that no physician and surgeon or midwife or other person who has heretofore or may hereafter practice or attempt to practice medicine, surgery, or midwifery in any of its branches, shall within said village attend as physician, surgeon or midwife, or touch or handle, any woman in childbirth, nor perform any act of surgery, or touch the mucous membrane of any person within thirty days after such physician and surgeon, midwife, or other person practicing or attempting to practice medicine, surgery, or midwifery has touched or handled any person affected with blood poison, gangrene, erysipelas, or other infectious disease, except in continuing to treat his or her patients affected with the same, and no other infectious disease." The answer of the members of the board admitted the passage by them of the preamble and order as charged, and that the same was placed on the record of the board's proceedings, but averred that they passed the order as members of the board of health; that they had reasonable and probable cause to believe and did believe the facts stated to be true, and published the same under an honest belief that such publication was required of them in the due discharge of their official duties as such board, and denied that the same was published maliciously, or with any intent to injure the party suing. The Supreme Court of Ohio holds that the preamble, construed in connection with the order and the pleadings, was libelous per se, or by itself, and the publication of it was not privileged. It was the duty of the court to so instruct the jury, and not to submit those questions for their determination. On showing by a preponderance of the evidence that the preamble was published as charged, and that the party suing was the physician intended by the members of the board and understood by the community as such physician, he was entitled to recover at least such compensatory damages as were attributable to the publication. If, in such case, the evidence warranted a finding that in the passing and publication of such preamble some of the members of the board were actuated by express malice and others were not, and the jury should so find, it would be proper practice to render a verdict against all of the members for compensatory damages, and an additional amount as exemplary damages against those found to have been guilty of express malice. The result to be reached in the present instance, the court says, was the order providing for the conduct of physicians in the village. To reach this result, however imminent the duty of the board to pass and publish a proper resolution to correct the evil which it was assumed existed, it could not be at all important to charge negligence on the part of any physician. Not being essential, or even important, that the board should undertake to fix the blame on any particular person, it followed that the preamble was not a privileged communication, and that those who passed and published it assumed the responsibility as individuals, and could not shield themselves by merely showing *that they acted as members of the board, and that the order* itself was a proper one.

Current Medical Literature.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

July 4.

1 *Arterial Sclerosis as a Cause of Nervous Disease. M. Allen Starr.
2 *The Anatomy of Portal Anastomosis. Rolfe Floyd.
3 *Synopsis of Experiments on the Transformation of Circulating Uric Acid in the Organism of Man and Animals. Alfred C. Croftan.
4 How May We Cure Posterior Displacement of the Uterus? Augustin H. Goelet.
5 *Tent Life for Consumptives. J. Edward Stubbert.

1. **Arterial Sclerosis in Nervous Diseases.**—The importance of endarteritis in the etiology of nervous diseases is insisted on by Starr. In 200 consecutive cases of apoplexy of which he has records in private practice, in 80 per cent. there were distinct prodromal symptoms which had been regarded at the time as neurasthenic, but which are more readily explainable under the law of malnutrition due to arterial disease. He thinks if the condition of the blood vessels and the heart muscles were thoroughly investigated for the possible existence of accentuated second sound, and the tension of the arteries not only in the wrist, but elsewhere, and the condition of the kidneys were studied, the so-called neurasthenia would be more apt to yield to treatment than by the use of remedies directed particularly to the nervous system. He also remarks that it is not so commonly known that the majority of diseases of the spinal cord are equally traceable to the vessel wall where direct infection is not shown. Vascular disease is found in poliomyelitis, bulbar palsy, myelitis, spastic paralysis, so-called senile paraplegia and combined sclerosis, all of which can be traced often to arterial degeneration. Diseases of the peripheral nerves are also occasionally due to endarteritis, as in case of alcoholic neuritis. The facts in regard to the occurrence of partial neurasthenia and prodromata of apoplexy also suggest the possibility that some minor nervous symptoms, spinal or otherwise, are possibly due to malnutrition of the brain from arterial disease. It is not sufficient to make a diagnosis of spinal neurasthenia in some of these cases; the possible underlying cause, endarteritis, etc., must also be considered. The various forms of neurasthenia may also be brought under this same etiologic category. He would not say that all nervous affections are due to this cause, but very many have it for a factor, and it should receive more attention in the management of these cases. The treatment of neurasthenia, neuralgia, spinal and hemiplegic symptoms also includes methods which have for their aim the establishment of an equable circulation. The ordinary treatment of arterial sclerosis by drugs he does not

consider very satisfactory. There is usually very great variation in the tension of the pulse, and while we can control this with various remedies, it is improper to keep such constantly employed. He has never observed in the treatment of Graves' disease a high-tension pulse. He thinks the thyroid secretion in the blood is responsible for this. This suggests the use of thyroid extract in the conditions of arterial disease. He has found it of great benefit in managing temporary high pressures, and has also seen a certain amount of benefit from its use in chronic conditions, for which he prefers it to nitroglycerin. It should not be overlooked that many patients who have extensive arterial disease, with its symptoms, live to extreme old age, and this should be remembered in making the prognosis. Many persons also having the physical signs of extreme arterial sclerosis have no symptoms whatever. The underlying condition is one that may spontaneously subside or disappear under treatment.

2. **Portal Anastomosis.**—Floyd's article gives a description of the liver circulation in the fetus at term, the changes following at birth and the sites of anastomosis between the portal and systemic veins in the adult. The article is detailed and contains several schematic diagrams which aid in its comprehension.

3. **Uric Acid.**—Croftan has investigated the effect of uric acid injected into the system and how it is destroyed. His clinical conclusions are stated at some length. He finds that the watery extracts prepared from the kidney, liver, muscles, blood and spleen all destroy uric acid in varying degrees, and it is probable that these organs have the same effect during life by the aid of unorganized soluble ferments secreted. The proposition that uric acid is normally destroyed in the organism may therefore be considered answered in the affirmative by these experiments, and from analogy with certain animal experiments. Bulk for bulk, the kidney destroys more uric acid than the liver, the liver more than the muscles, the muscles more than the spleen and the blood. The fact that the kidneys normally destroy uric acid teaches that great care should be exercised in drawing conclusions from the plus or minus of the urinary uric acid excretion. The circulating urinary uric acid can not be considered as an index. It merely represents the algebraic sum of circulating uric acid and the uric acid destroyed in the kidneys. There is, therefore, always more of circulating uric acid than is indicated by the urinary uric acid excretion. Derangement of the liver function has been considered as a cause of uratic diathesis, more uric acid than normal being formed. It seems to Croftan that the derangement consists in inability of the liver to destroy the normal amount of circulating uric acid or the excess that is so frequently ingested. The power of the muscles to destroy uric acid may explain, as Wiener suggests, why exercise often relieves uratic symptoms. The accelerating effect of salicylates and dilute alkalies on the power of one of the uric-acid destroying bodies (the nucleo-proteid) to liberate oxygen, aids in explaining why these remedies are beneficial. The formation of oxalic acid from uric acid in the kidney may explain the clinical fact that in gout oxaluria is not infrequent, and occasionally the appearance of much oxalic acid in the urine is accompanied by a corresponding decrease in the uric acid. The formation of urea from uric acid demonstrates that uric acid is not a terminal product, but an intermediate one between certain albumins and urea—the old view slightly modified. Much that has been written on the urea-uric acid ratio is sheer nonsense. There is much experimental evidence to show that the function of certain organs that destroy uric acid is also to destroy fats and sugars. Inadequacy of this triple function would lead to the accumulation of fat, of sugar and of uric acid, pointing to the pathogenic relationship between obesity, diabetes and the uratic diathesis, all characterized by accumulations in the blood and tissues of bodies that should normally be destroyed.

5. **Tent Life for Consumptives.**—Stubbert insists on the value of tent life giving free ventilation which can not be supplied in the winter by sleeping with the windows open, excepting in very exceptional cases where the room has a southern exposure and there are windows on three sides. Tent life furnishes the conditions needed and should be made as comfortable as possible. For the summer months hardly anything more than a sheltering roof will be required, but in the winter in the colder regions something more substantial is needed, such as a conical tent with perfect ventilation in all kinds of weather. He advocates the erection of tents in connection with hotels and summer resorts. The great value of the open-air treatment is its cheapness combined with its demonstrated efficacy. The best site for a tent is not in a forest, but on the edge of a wood where the patient can have the full benefit of sunshine and free circulation, with shade within reach and protection from the colder winds.

American Medicine, Philadelphia.

July 4.

6 *The Occurrence of Painful Affections of the Feet Among Trained Nurses. Robert W. Lovett.
7 *Sixty-eight Reasons why "Glasses Did Not Give Relief." George M. Gould.
8 *Funnel-chest, with Report of Two Cases. Florence H. Richards.
9 *The Early Diagnosis of Pregnancy. J. J. Gurney Williams.
10 *Hemorrhage Following Tonsillotomy, with Report of a Serious Case. Adolph H. Urban.
11 What Are the X-Rays? J. Rudis-Jicinsky.
12 The Medical Institutions of Madrid. Nicholas Senn.

6. **Painful Affections of the Feet.**—The frequency and severity of affections of the feet among trained nurses have been studied by Lovett, who details his methods of treatment and offers his conclusions as follows:

> 1. It has not been possible to tell, with any certainty, by examination whether or not the feet of an individual are likely to give trouble. The only reliable information obtained in these cases was given by the imprints seen through glass. A foot with a well-distributed pressure area seemed rather less likely to give trouble than one resting on two islands: the degree of pronation, the condition of the circulation, the relative weight of the nurse, and the dorsal flexibility of the foot all proving of little or no value as elements in prognosis. A flat foot may be perfectly serviceable, as may also a severely pronated one, while an apparently well-balanced foot may become painful.
>
> 2. The factors in causing the trouble among the nurses were to be sought rather in the general conditions than in any special conformation of the foot. It followed, in many cases, illness and other conditions causing muscular debility. It occurred in most cases from two to three months after entrance, and it began most often in the early spring, when the nurses had been indoors all winter, and least often in the fall.
>
> 3. The trouble was caused by a rolling in of the foot and a shifting inward of its weight-bearing areas and not in any case observed by a breaking down or even lowering of the arch.
>
> 4. Although proof by figures is lacking, it is probable that the amount of trouble has been decidedly less than it would have been without the use of a proper boot.

7. **Why Glasses Do Not Give Relief.**—It is naturally impossible to detail all of the sixty-eight reasons with their bases as here given by Gould. He emphasizes, however, the defects of the physician in refraction work, which he claims requires a special adaptability, perfection of methods and appliance, care in determining the relative amounts of astigmatism, etc., and the proper methods of examination. The necessity of wearing the right kind of glasses and seeing that they are properly adjusted are emphasized. For further details the reader is referred to the article.

8. **Funnel-Chest.**—Two cases are reported by Richards, one of which was extreme. This form in which the entire sternum is depressed is rare. There is always a congenital deformity and treatment is practically unavailing.

9. **Pregnancy.**—The most important signs of early pregnancy, according to Williams, are change in the shape of the uterus from the pyriform to more spherical shape, the softening of the lower uterine segment, which is not always reliable, the bluish discoloration of the vagina, which he thinks is of considerable value, the lowered cervix and the increase in the weight of the uterus and its lessened mobility. In conclusion some remarks are made on the recognition of ectopic pregnancy.

10. **Tonsillotomy.**—The point of interest in the case reported by Urban is that complete exsanguination resulted from tonsillar hemorrhage following tonsillotomy, bleeding from the nose, lungs and stomach being excluded by careful examination. The occurrence of such severe bleeding in children is rare, and there was here probably an anomalous tonsillar or internal maxillary artery. The case indicates that one should be prepared for such complications.

Boston Medical and Surgical Journal

June 25

13 *Surgical Tuberculosis (To be continued) Herbert L Burrell
14 *The Blood in the Typhoid of Children A Clinical Study Frank Spooner Churchill
15 *The Cure of Cancer by Use of the X Ray H W Van Allen
16 A Case of Strangulation of the Testis Due to Torsion of the Cord Arthur T Cabot

July 2

17 *Surgical Tuberculosis (Concluded) Herbert L Burrell
18 *The Clinical Associations and Significance of the Cardiopulmonary Murmur James J Putnam
19 Nasal Polypi A Study of 147 Cases J Payton Clark
20 Septic Endocarditis A W Dudley

13 and 17 —**Surgical Tuberculosis** —Burrell accepts the view that about 80 or 90 per cent of adults at the age of 40 have been affected in one way or another with tuberculosis The infection is a universal one The fatality of the disease however, is decreasing The surgical type itself is most frequent between the ages of 10 and 30 years of age according to Leonte It is clear that the majority of individuals are able to conquer the disease, it is not as malignant in character as has been alleged He discusses at some length the pathology and the principles of treatment, which are physiologic rest and improvement of the powers of resistance of the individual Naturally sanatorium treatment is discussed at some length, and he describes the methods and make-shifts which have been utilized, and criticises the ordinary hospital construction in some respects for this disorder

14 **Typhoid in Children** —The conclusions of Churchill's article are that the blood in infantile typhoid differs from that of adults only in degree There is a reduction of the erythrocytes especially during the first three weeks with subsequent increase, reaching normal on the fifth week The hemoglobin suffers more, proportionately, than the erythrocytes The leucocytes are reduced throughout the first four weeks the lowest average being reached during the second week excepting in severe cases Leucopenia is of diagnostic value, especially in children in whom most febrile affections produce a leucocytosis We need more data to determine the relative proportion of the different varieties of leucocytes in the different groups, the greatest variation being in the polymorphonuclears and mononuclear elements, the latter increasing and the former diminishing with the disease The increase in mononuclears is chiefly in the lymphocytes

15 **Cancer and the X-Rays** —Van Allen insists on the importance of the selection of apparatus, favoring the use of a coil rather than a static machine, the proper selection of tube, care as to inflicting burns, either on the operator or the subject, the frequency of treatment, the length of exposure, etc In many cases he finds the combination of removal by cutting and radiation the best course He briefly mentions other uses of the rays, such as for lupus erythematosus, epilation and pustular eczema of the lip, reporting cases

18 **Cardiopulmonary Murmur** —This murmur which has been considered as indicating some unusual relationship of the heart and lungs, has been found by Putnam to be more frequent among neurasthenics than among other classes His observation suggests that it is not impossible that it is a disease due to some abnormality or defect of the innervation by which the action of the heart is brought into relation with that of the lung The explanation of the phenomenon is easier if we assume that the regulator mechanism governing the lung tension or tension of the vessels has been damaged and the relation between the two has become defective He does not claim this as an adequate explanation but one that may possibly assist in obtaining a satisfactory one

New York Medical Journal and Philadelphia Medical Journal (Consolidated)

July 4

21 *Intravascular Antisepsis (To be concluded) Charles C Barrows
22 *A Simple Method of Appendectomy Emil Ries
23 The Hookworm Disease in Alabama E D Bondurant
24 *Gonorrhea Insontium Especially in Relation to Marriage (Concluded) Prince A Morrow
25 *Perineal Partial Prostatectomy Weller Van Hook
26 *The Treatment of So called Diabetic Gangrene of the Extremities Howard Lilienthal
27 *The Diagnostic Value of a Proctoscopic Examination in Proctitis with Some Remarks on that Affection Herman A Bray
28 *A New Method of Drainage in Empyema Samuel Lile
29 Black Chromidrosis with Hysterical Paralysis James W Putnam

21 **Intravascular Antisepsis.**—Barrows defends the use of intravascular antiseptics, claiming that experiments made on rabbits with unfavorable results do not invariably represent the conditions in the human subject Much stronger solutions of formaldehyd have been used by Jenks of Memphis, Nelson of Virginia and Maguire of London in the treatment of pulmonary tuberculosis, without harm His own experience has borne out their conclusions, and he is satisfied that one need have no fear of trouble in this direction His technic is described A freshly made 1 in 5,000 solution of formalin (40 per cent formaldehyd) and freshly prepared normal saline solution at a temperature of 100 is injected into a superficial vein, care being taken to have the nozzle in the vein and that air is prevented from entering The fluid should be slowly injected, the amount depending somewhat on arterial tension and the general character of the pulse He reports four cases in this installment of his article, which is to be concluded in a future number

22 **Appendectomy.**—A simple method here described by Ries consists in freeing the appendix from the mesoappendix down to the cecum, then cutting it off about one third of an inch from its base, inserting a suture with a round straight needle into the lumen of the stump, passing it out about one sixteenth of an inch below its end Then the needle is introduced into the lumen of the stump and carried out through the cecum externally about an inch from the base of the appendix Traction on this thread inverts the appendix into the cecum and the serous funnel of the inverted appendix is then sutured The thread which has drawn the appendix into the gut is then cut off close to the surface of the cecum and rubbed into its lumen The mesentery is then sutured in such a way that its stump covers the suture of the appendix so that no raw surface or foreign body remains in the peritoneal cavity except the last knot of the catgut The perforation of the bowel by a needle is he claims, perfectly harmless It is completely closed by rolling the bowel between the fingers Another possible objection is that the inversion would be impossible where there is a stricture or obliteration of the appendix This, however, might be overcome by simple perforation of the obliteration or stretching of the stricture He has never had any trouble as a consequence of the use of this method, which he prefers to others, and has employed in 21 cases The whole operation takes less time to perform than to describe it, as can be seen by three cuts

24 —See abstract in THE JOURNAL, xl, p 1602

25 **Perineal Partial Prostatectomy** —Van Hook operates somewhat on the plan of Zuckerkandl, making a transverse incision in the perineum about an inch in front of the anus, not over an inch to an inch and a quarter in length He then makes a median incision into the membranous portion of the urethra, in this respect differing from Zuckerkandl, who continues the transverse cuts The point of the knife, under the guidance of the finger, is introduced into the urethra and into the groove of the staff and pushed forward An opening of the desired size is made, usually about three fourths of an inch in length The bladder is then completely explored with the finger, and it is always necessary to empty it to do this thoroughly, and possibly to have an assistant push it down from above Next the prostate, the median and lateral lobes are carefully examined, which can be better done with the finger within the bladder than in any other way Next the finger is removed from the urethral wound, and the lateral lobes are palpated through the capsule, passing the finger outside the urethra between the lateral halves of the levator ani until the commissure of the prostate is reached, when the finger is passed over each lateral lobe in succession Usually the right half of the prostate is first operated on It may be necessary to cut the capsule enough to facilitate penetration of the prostate with the finger The finger is then swept around the main mass of prostatic tissue the operator

keeping his mind on the preservation of the capsule. The masses which have been loosened are removed with a stone forceps or the hysterectomy volsella forceps of Richelot. It may be necessary to draw down the uppermost part a little with the tenaculum forceps. The left half can generally be removed in the same manner and the median lobe can almost invariably be removed without opening into the bladder. In case of excessive fibrous character of the mass, making the enucleation process of the finger difficult, Van Hook has devised a sort of scissors-like instrument for morcellating the organ. It is only a matter of convenience to use this, as curved scissors can also be used. Having removed as much of the prostate as seems necessary, he introduces a drainage tube into the bladder about the size of a finger, suturing it to the skin of the perineal wound. Two strips of gauze, one on each side of the tube, are then inserted into the space previously occupied by the lateral lobes. The after-treatment is important. The gauze strips are left for twenty-four to thirty-six hours, care being taken not to disturb the drainage tube in removing them. The drainage tube is left for a much longer period, three or four days to two weeks. A smaller tube may be substituted for a time. The fistula is usually a little slow to heal, but if sounds are introduced twice a week, and if exuberant granulations are kept down by passing a probe armed with silver nitrate along the fistula, there is no difficulty about the eventual closing. The patient should not be required to lie continuously on his back, but after the first twenty-four hours should be turned from side to side, thus facilitating closure of the wound. He thinks the advantage of this partial prostatectomy is that we are less liable to do damage to the other structures. From his experience he thinks the anterior parts of the gland may be easily left, but further experience may be required to decide how much to leave. Probably a diminution in the size of the remainder of the prostate may be anticipated after partial intracapsular prostatectomy. Usually the lateral and posterior parts of the gland are the cause of the trouble, and operation may be reasonably confined to them. He reports a number of cases illustrating the success of the operation.

26. **Diabetic Gangrene.**—Lilienthal divides these cases into three groups according to their urinary and symptomatic indications: Group 1, general condition good; no acid intoxication; sugar much or little; one or two toes or fingers affected with or without phlegmon, but not threatening usefulness of the member. In these cases the treatment should be conservative, the affected fingers and toes removed and the plegmon drained by the freest incision and the wounds packed; wet dressings applied, tendon and fascia being allowed to slough away. Group 2, general condition good; no acetone or diacetic acid in the urine. Local condition threatening the usefulness of the member. Here the ablation of the limb high above the upper level of the disease is the proper course. If the disease is in the foot, it is best to make the amputation well above the knee. In the upper extremity, however, amputation need not be above the elbow for gangrene of the hand. Skin and muscle flaps instead of mere skin flaps should be used. Group 3, general condition poor or comparatively good. Much or little sugar; acid poisoning present. Disease threatening or not threatening the part. In these cases treatment must be palliative until the acid poisoning and its impending coma shall have disappeared. If this can not be brought about, the prognosis is poor and should deter us from radical operation. This does not mean, of course, that drainage should not be used. On the contrary, free incision of the tissues impeding free evacuation of the phlegmonous spaces must be practiced in any event, but no more than is absolutely necessary should be done, and no radical operation. He remarks on the change in treatment that this form of gangrene has undergone within the last fifteen years owing to our more improved clinical methods of testing the urine for acetone, acetoacetic acid and total ammonia.

27. **Proctitis.**—Two cases are reported by Bray and discussed. He insists on the importance of digital examination in case of chronic diarrhea which will detect polyps, ulceration and impactions. The next in importance is the use of the procto scope. With it in a proper light the entire circumference of the bowel can be seen. He puts the patient in the Sims position, oils the tube and slips it through the sphincter while the patient is straining. When it has been introduced about three inches in the bowel, atmospheric inflation will lift the walls out of contact, and the direction of the tube can be observed as it is passed up in the sigmoid flexure. When fully introduced it is gradually withdrawn and the whole gut thoroughly examined. It is important that the diagnosis should be made early for proper remedial measures to be employed. The first thing to do is to remove the cause. The local treatment consists in antiseptic and astringent injections. If there is any local disease, this, of course, should be first attended to.

28. **Drainage in Empyema.**—Lile describes a new drainage tube of hard rubber with a cup-shaped funnel on each end, bent at an angle a little greater than a right angle. The short arm is inserted into the pleural cavity. The longer arm is flattened to hold it in place. It can not slip either in or out and drains perfectly. Irrigation can be done through it with perfect ease. With this drainage tube he sees no reason for resection of the ribs, excepting in cases with sinuses existing for months after removal of the tubes, or in certain tuberculous cases.

Medical News, New York.

July 4.

30 *The Struggle of the Body Against Tuberculosis and Its Immunization. Edoardo Maragliano (Genoa).
31 *Tuberculosis in the Tenements; a New Use for Fire Escapes. Alfred Meyer.
32 Societies for the Prevention of the Spread of Tuberculosis; the Necessity of Such Organizations and the Work to Be Accomplished by Them. F. M. Pottenger.
33 The Sanatorium Treatment of Tuberculosis. Herbert M. King.
34 Tuberculosis of the Middle-ear, with the Report of a Case. Z. L. Leonard.
35 *The Present Status of Some of the Problems of Tuberculosis. John L. Heffron.

30. **Tuberculosis.**—Maragliano's article has already been reviewed at some length in these colums, p. 67.

31. **Tuberculosis in the Tenements.**—The suggestion made by Meyer is that the fire escapes be utilized for the open-air treatment of tuberculosis in tenement houses, and he gives illustrations. There is one difficulty in the way, and that is the section of the building code which prohibits placing encumbrances on any of the fire escapes, but he thinks this is practically disregarded. He believes that public opinion will justify the use of fire escapes for the preservation of life from the ravages of tuberculosis. They are available in most tenement houses in the large cities. He points out their advantages in the way of open-air, shelter, or the easy possibility of such, etc.

35. **Problems of Tuberculosis.**—Heffron notes the overthrow of the importance of heredity in tuberculosis, the importance of infection and the remedial value of producing a soil that is resistant. He says the decrease of tuberculosis has been very marked and, as regards bovine infection, he holds that the burden of proof is on Koch's side and he will be required to show to the perfect satisfaction of others that infants are never infected by the use of milk of tuberculous cows. The diagnosis of tuberculosis is practically impossible in its incipient stages. The fact is that most persons have probably suffered from it to some degree, and he does not see how we can escape the view of Welch that with proper search almost universal infection must be admitted. As regards the methods of diagnosis, he thinks accurate thermometry is one of the most important, while the tuberculin test is also reliable if properly used, and is not injurious. The present status of prognosis shows a marked change from twenty years ago. Throughout the world the number of deaths from tuberculosis is decreasing, England heading the list. The percentage of cures in the various sanitariums and so on shows the tractability of the disease under proper care. The prognosis is better the earlier the disease is recognized. The immunity question is noted, but Heffron is not prepared to admit that immunizing injections can yet be safely used on man. In the treatment there are certain general principles: faith in the

curability of the disease and not so much the attack on the bacillus is the strengthening of its host by open air treatment, etc Recoveries from tuberculosis are far more frequent than those from insanity, as he shows by comparative statistics

Cincinnati Lancet-Clinic

July 4

36 Tubercular Peritonitis in Childhood Alfred Friedlander
37 Chloride of Sodium Brose S Horne
38 Surgery of the Prostate Pancreas Diaphragm Spleen and Thyroid (Continued) B Merrill Ricketts

St. Louis Medical Review.

June 27

39 The Wertheim Operation for Cancer of the Uterus Report of a Case H S Crossen

Medical Age, Detroit.

June 25

40 *Operative Treatment of Glaucoma W A Harper
41 Ovulation and Menstruation Q W Hunter
42 A Case of Continued Development of the Fetus in Utero After Rupture of the Membranes and Escape of the Liquid Amnii H W Chapman

40 **Glaucoma**—The only treatment for glaucoma Harper holds is iridectomy, though he sees a possible future for Jonnesco's operation

American Gynecology, New York.

June

43 *The Conservative Operative Treatment of Chronic Inversion of the Uterus Reuben Peterson
44 *The Present Position of Hysterectomy for Fibroids Skene Keith
45 The Treatment of Fibroid Tumors of the Uterus Archibald McLaren
46 A Plea for the Removal of a Minimum Amount of the Broad Ligament in Salpingo oophorectomy J Wesley Bovee
47 *The Vaginal Incision in Sepsis Following Abortion Hunter Robb

43 **Chronic Inversion of the Uterus**—Peterson describes a case operated on by the vaginal method, splitting the uterus and replacing it He asks why, in cases of chronic inversion with our present knowledge we should not in any given case disregard the old methods of reposition and at once employ the more modern safer and surer surgical methods The elastic pressure method is uncertain and dangerous and may increase hemorrhage which the patient can not afford The same is true to a greater degree of taxis This is not the less true because of the fact that spontaneous reposition has taken place The safest way is some form of incision operation by the vaginal route

44 **Hysterectomy for Fibroids.**—The position held by Keith is a conservative one in the main It is impossible to lay down positive rules for hysterectomy The age of the patient surroundings etc, should be considered In the following cases however he says we can safely say that hysterectomy ought to be the rule In all fibro cysts in all edematous tumors when accompanied by profuse watery discharge in large tumors causing symptoms, that is those reaching up to the ribs and when the patient is under 50 years of age and even over that age, it may be worth while to have a large tumor removed In small tumors extending not higher than the umbilicus fibro cysts and edematous tumors excepted he would advise the Apostoli treatment which he has in fifteen years' experience found to be valuable in reducing the growth and causing early menopause in the great majority of cases of fibroids where the growth is not submucous, without danger to the patient He does not hold that electricity, even in case of small tumors, is always the best treatment because the risk of hysterectomy is so slight

47 **Vaginal Incision in Postabortive Sepsis**—Robb finds that in the majority of cases the infection begins in or near the external genitals, successively implicating the vagina and cervix the uterus and fallopian tubes and finally reaching the peritoneal cavity His method of treating these cases is to dilate the cervix curette the uterus either with the finger or finger and curette combined wash it out with hot saline solution and 2 ounces of peroxid of hydrogen then cleanse again with hot saline solution and sponge dry Two or three drams of iodoform powder are then carried into the cavity and it is packed with strips of sterile gauze He then makes a free opening into the cul de sac and after evacuating any fluid that may be present, irrigates it freely in the same way as has been done with the uterus Then two or three drams of sterile iodoform powder are dusted in the cul de sac, which is filled with strips of sterile gauze. By this method he claims that we prevent future absorption of toxins from the cul de sac, save the fallopian tubes and ovaries by preventing adhesions which would almost inevitably form as a result of the organization of the exudate He gives in conclusion the bacteriologic and clinical history of 10 cases of septic infection thus treated

Wisconsin Medical Journal, Milwaukee

June

48 *Nephritis Its Diagnosis Particularly of Atypical Forms, and Some Points in Its Treatment Arthur R Edwards
49 *The Moist Dressing in the Treatment of Compound Fractures Charles H Lemon
50 A Case of Bromoderma Pustulo-Tuberosum M Milton Portis

48 **Nephritis**—The chief conclusions of Edwards' article are given in substance as follows Carefully repeated routine chemical and microscopical examination of the urine every twenty four hours usually, but not invariably, detects acute and chronic nephritis, if aided by examination of other viscera and parts, such as disclosure of cardiovascular changes, retinal involvement, etc The visceral or somatic changes, usually present in nephritis, may be lacking in such cases and be capable of other interpretation, such as polyuria, atheroma, etc The most essential urinary findings may be lacking and we may still suspect nephritis even after negative results Nephritis may be unattended by albuminuria It is then usually interstitial in type, though chronic parenchymatous nephritis, acute nephritis and chronic interstitial nephritis, as well as the type described by Dr D D Stewart, may also occasionally occur Casts should always be *searched for* They sometimes seem to indicate a degeneration rather than an inflammation and are not invariable in nephritis nor are they invariably nephritic Further clinical caution and pathologic examination will probably increase the number of cases of non albuminuric renal inflammation of acute, subacute and chronic types The non albuminuric nephritis of the Stewart type is of special importance in life insurance and in practice, since prophylactic measures may be instituted and the prognosis affected Uremia may be easily confused with organic brain lesions, and vice versa Every type of focal brain lesion is simulated, and it may, moreover, coexist with brain disease In treatment rest to spare the kidneys and save the heart is of prime importance Rest applies to nervous strain as well as to physical work The diet should not irritate or tax the kidneys in its elimination Nutrition requires individual study, the classic diet must be abandoned when there is loss of weight or increasing anemia Edema is poorly managed by diuretics, cathartics too often threaten assimilation and nutrition, sweats tend to concentrate the blood and rather favor uremia Mechanical drainage is the best procedure, since it removes not only the fluid but the contained impurities, avoiding their repassage through the already surcharged blood and damaged kidneys The condition of the heart and the efficiency of response to cardiants is often the main thing in the prognosis and treatment

49 **Moist Dressings in *Compound Fractures.***—*The* moist dressings here described by Lemon consist in the application of hygroscopic gauze moistened or wrung out of water or an antiseptic solution and applied to the skin or wound surface, its evaporation and consequent drying prevented by its being covered with some impervious material like oiled silk or gutta percha tissue Its hygroscopic character promotes absorption of the wound secretion distributes it evenly and prevents its accumulation in the wound It stimulates the regional capillary circulation in the cut surfaces and induces a vigorous blood current which mechanically washes out the wound and brings an abundance of blood tissue to the threatened area, the best antiseptic, provided the infective material is not too excessive In treating compound fracture he would introduce a bit of gauze or some strands of catgut through the wound for a drain Such a wound properly treated has no swollen or everted edges no redness no sloughing surfaces no tension,

pain or fever. This is the ideal result. If we know that infection is absolutely absent a dry dressing would be better, but we can not be sure. Illustrative cases are given.

Pennsylvania Medical Journal, Pittsburg.

June.

51 *The Wisdom of Removing All of the Tonsils Whenever Enlarged and Diseased. Louis J. Lautenbach.
52 *The Use and Abuse of Radiotherapy. George C. Johnston.
53 On the Management of Rectal Diseases. William M. Beach.
54 The Abuse of Drugs. G. O. O. Santee.
55 And Then. (Consideration on Medical Policy.) Z. B. Taylor.
56 Clinical Report of a Case of Typhoid Fever in a Seven-Months-Old Infant. A. W. Clouse.
57 A Case of Gastric Crisis of Tabes. Frank H. Murdoch.

51. **Tonsillectomy.**—Lautenbach holds that enlarged tonsils are always a menace to health, and unless there are unusual complications, should be removed. The operation is not difficult and seldom has serious results. It is attended with increased health, better respiration and improved digestive function; there is less liability to microbic disease, especially diphtheria, and the nasal catarrh will be improved. The lymphoid structures in the pharynx will disappear; the tendency to ear disease is diminished and there will be no more tonsillitis.

52. **Radiotherapy.**—Johnston holds that there is only one way to become a good radiotherapeutist, and that is by experience. Every tube must be studied by itself. It should be seasoned by a course of radiographic work before it is used for treatment. The same tube acts very differently under different circumstances. After a man has used one for a while he learns its peculiarities. The low vacuum is more dangerous in inexperienced hands, but the hard tube is not much safer. It is not necessary to burn the patient, and if proper dosage or suitable radiation has been administered the healthy tissues suffer very little. The pathologic tissues, however, slough or are absorbed. The danger of desquamative dermatitis is an ever-present one whenever radioscopic inflammation exists. We must be especially careful in operating around the tongue, pharynx and lips on account of the difficulty of giving outside drainage and danger of swallowing of the irritating secretions. The cumulative action, with the long period of incubation, must not be lost sight of, and idiosyncrasy should be considered. The so-called strawberry blondes are peculiarly susceptible to *x*-ray burns or dermatitis. He claims that treatment, with proper management and skill, of the various forms of skin lesion is very satisfactory, but the man who wishes to apply it should study his apparatus and his patients and select them carefully. He should avoid routine measures.

Archives of Otology, New Rochelle, N. Y.

June.

58 *The Limits of Variation in the Depth of the Mastoid Antrum. Philip D. Kerrison.
59 Intradural and Later Double Cerebral Abscess Complicating Chronic Tympanic Suppuration; Operation; Cure. B. Alex. Randall and Barton H. Potts.
60 Osteomyelitis of the Skull, with Empyema of the Nasal Accessory Cavities; Sinus Thrombosis; Pyemia; Death; *Autopsy. Arnold Knapp.*
61 *A Discussion on the Differential Diagnosis and the Treatment of Osteosclerosis of the Mastoid Process. Otto J. Stein.
62 Three Cases of Encephalitis in Connection with Otitis Media. Dr. Voss.

58. **Depth of the Mastoid Antrum.**—From measurements and facts adduced, Kerrison thinks we are justified in saying that in operations on the mastoid process the antrum should be approached from the nearest point of the mastoid cortex which, in the great majority of cases, is a small triangular space just behind the spine of Henle. This point of attack not only furnishes a guide to the site of the antrum, but also affords fairly accurate data in regard to the depth beyond which it is not safe to proceed. The depth of the antrum is always less than the length of the postero-superior wall of the meatus; in the great majority of bones it is not over 12 mm., is often very much less, and never greater than 15 mm., or ⅝ of an inch. Therefore, in surgical attempts to expose the antrum, ⅝ of an inch should be regarded as the extreme limit of safety.

61. **Mastoid Osteosclerosis.**—The diagnosis of this condition is discussed by Stein, who quotes largely from authorities. He points out the possible differentiation from hysteria and neuralgias from other causes, such as syphilis, reflexes from diseased teeth, nasal and laryngeal disorders, etc. In hysteria we have the characteristic mental condition and symptoms. Pain is more frequently located in the auditory canal, and is also referred to the temples. It is greatly affected by the mental condition. The history, heredity, etc., should also be considered. In syphilis the history of infection and the characteristic nocturnal pains are usually sufficient. The pain of neuralgia shoots in the direction of the nerve trunk and its branches. The symptoms of osteosclerosis are largely centralized throughout in pain. There may be nothing objective whatever to be noticed, though we may discover a slight redness and edema and possibly a spot on the line of the meatus that elicits a sharp sensation of pain. The pain is continuous, lasting over long periods with only remissions, and very seldom intermissions and with frequent exacerbations. There may be some rise of temperature in the early stage and deafness. The fact, however, that this nagging, constant pain may develop a neurotic disorder should not be forgotten. While local treatment, such as rubefacients, etc., may be employed in the early stage, surgical treatment is the important part of the therapeutics and authorities seem to agree as to its benefits. In operating, the object is to relieve the bone tension, and we should remove as large a core of bone as possible with clean, smooth edges and surface. In conclusion, he urges the recognition of a broader field for surgical intervention in affections of the temporal bone.

Illinois Medical Journal, Springfield.

July.

63 A Sociologic View of Criminal Abortion. W. J. Fernald.
64 *The Practical and Scientific Value of Bacteriologic Examinations of the Blood During Life. Ludvig Hektoen.
65 Educational Influences and Opportunities of Our Civil Courts from a Medical Standpoint. O. B. Will.
66 *The Diplococcus Scarlatinæ. W. J. Class.
67 Sewage Disposal for Inland Towns. Arthur N. Talbot.
68 Successful Removal of a Cystic Fibro-myoma of the Uterus Weighing 87 Pounds. J. Clarence Webster.

64. **Bacteriologic Examinations.**—Hektoen points out the advantages of bacteriologic examination of the blood during life, and describes the technic, the making of cultures, etc., and reports instances of its value. His conclusions are that bacteriologic examination of the blood by modern methods has proved of scientific and practical value in septic diseases, in septicemia, in pneumonia, and especially in typhoid and paratyphoid fevers. The etiologic diagnosis, that is, recognition of the exact disease, requires the application of practical medicine or laboratory methods, which, however, will be more and more facilitated for private use by the physician in his office.

66. **Diplococcus Scarlatinae.**—Class argues for the characteristic value of the diplococcus, which he says usually appears as a very large diplococcus, at least four times as large as the ordinary staphylococcus. It occurs in about 90 per cent. of cultures if made early in scarlatina, and can, as a rule, be easily differentiated from other large cocci. It may happen, however, that we may have cultures on blood serum giving but small staphylococci. The negative result is due either to the change of form of the germ or that it does not take the stain. These difficulties will seldom occur with his earth agar. It is also a good plan when primary cultures fail to show the typical diplococcus to isolate the germs in cultures by means of the plate method when the cultural characteristics of the organism, such as its glutinous character, and the fact that it does not affect milk in its growth, will prove of great aid in its recognition.

Atlanta Journal-Record of Medicine.

June.

69 *Uncinariasis (Ankylostomiasis); Its Frequency and Importance in the Southern States. H. F. Harris.
70 Post-operative Treatment of Six Cases of Abscess of the Appendix, with Some Observations on the Use of Large Doses of Strychnin for Ileus. R. M. Harbin.
71 The Treatment of Stricture of the Anterior Urethra. W. L. Champion.
72 Medical Jurisprudence. James R. Cain.

69. **Uncinariasis.**—Harris gives an account of this disorder as it occurs in Georgia, especially in the towns along the Georgia Southern and Florida Railway. His findings agree with those of Stiles. He notices the difference between the disease

when due to American and the old world species, the lack of petechial spots, etc., and suggests that the *duodenale* type may be the more severe form of infection. He has never found Charcot-Leyden crystals with the eggs, though they are said to be invariably found in the stools of those affected with the European malady. No disease so grave as this can be cured with such rapidity and certainty. He has never seen a case where complete expulsion of worms was not secured if the patient followed directions as regards not eating the day before, the use of free purgation and the taking of 60 gr. of finely powdered thymol. Alcohol should be avoided. Beyond this it is hardly necessary to do anything further, though there is no harm in giving tonics.

Therapeutic Gazette, Detroit.

June 15.

73 Sedatives, with Special Reference to the Bromides. John B. Chapin, Robert H. Chase and William P. Spratling.
74 An Ophthalmic Clinic in the Hospital for the University of Pennsylvania. G. E. de Schweinitz.
75 *Hyoscin in the Treatment of Morphinism. T. D. Crothers.
76 *Report of 53 Cases of Typhoid Fever, Treated in the Medical Wards of the Presbyterian Hospital, in Which Acetozone Was Used During November and December, 1902, and January, 1903. D. Flavel Woods and M. C. Thrush.
77 Iodoform Substitutes and Adulteration. V. Coblentz.
78 The Physiologic Action of Adrenalin Chlorid. Isaac Ott and S. B. Harris.

75. **Hyoscin in Morphinism.**—Crothers condemns the use of hyoscin as an antidote for morphinism. He thinks the withdrawal of one narcotic and the substitution of another can never bring about a cure, and is a very doubtful measure, and that further experience will sustain this opinion.

76. **Acetozone in Typhoid.**—From the results of 53 cases here tabulated, Woods and Thrush conclude that acetozone is a valuable intestinal antiseptic, apparently lessening the tendency to tympanites and diarrhea, especially when given early and continued until convalescence is well established. The stools seem less offensive, and in most cases the color and consistency are not affected by its administration. The drug does not seem to act on the heart or respiratory organs or have any appreciable effect on the kidneys, and hyperpyrexia rarely appears when it is used. Relapses are also infrequent if it is properly employed until well into convalescence. All the cases here reported gave the positive Widal reaction and other clinical symptoms.

Annals of Surgery, Philadelphia.

June.

79 *Results of One Thousand Operations for the Radical Cure of Inguinal and Femoral Hernia Performed Between 1891 and 1902. William B. Coley.
80 *Myositis Ossificans. William J Taylor.
81 *Pathology of the So-called Bone Aneurisms Harvey B. Gaylord.
82 Gunshot Wound of the Longitudinal Sinus. B. Farquhar Curtis.
83 *The Orbital Route for the Removal of the Second Branch of the Fifth Nerve at the Foramen Rotundum. Ansel G. Cook.
84 Tubage of the Pharynx for Facilitating the Administration [illegible] venting the Inhalation of Blood in [illegible] he Mouth and Face. A Hot-Water [illegible] able George W. Crile.
85 *Th[illegible] in Fecal Vomit During Operations for Intestinal Obstruction and Septic Peritonitis. E. Wyllys Andrews.
86 *Splenic Infections. Albert L Stavely
87 *Primary Typhoidal Perforation of the Gall Bladder. John F. Erdmann.
88 Retroperitoneal Hernia. Alfred B. Atherton.
89 A Suction Apparatus for Continuous Drainage. Karl Connell.
90 *Primary Carcinoma of the [illegible] schcowitz
91 Excision of the Scapula [illegible] interstitial Myositis Associated with [illegible] William B. Hopkins.
92 Instruments for Use Through Cylindrical Rectal Specula, with the Patient in the Knee chest Posture. Howard A. Kelly.

79.—See abstract in THE JOURNAL, xl, p. 1669.

80. **Myositis Ossificans.**—There are two types of this condition, one where bone has formed in the softer tissues, with or without history of injury, and no apparent connection with the skeletal bones or their periosteum, or where osteophytes occur to which muscle tissue is attached and which has undergone osseous change. The second is where there is formation of new bone resulting directly from accident to the bone or its periosteum, and involving the muscles and fibrous structures. A number of cases have been reported like this where the muscles became quickly ossified after injury. Several of these are reviewed in brief. The author then reports his own case in which a man was kicked by a horse in the thigh, producing periosteitis and the muscles—especially the deeper fibers—contained small bony particles. The pieces of bone and muscle tissue that were here removed were directly in contact with the periosteum. The patient made an uneventful recovery. The second case was more on the first type, a gradually developing formation of irregular bone plates growing from the fibula.

81. **Bone Aneurisms.**—This term has been applied to certain obscure, pulsating hemorrhagic tumors of the bone which are considered a specific affection by Oehler. Gaylord reviews the five classical cases noticed by Richet and Volkmann, and some more recently reported ones by Anger, Wythe and Oehler. He follows these with a report of his own case, with microscopic findings. He concludes that the affection can hardly be considered a specific one and that in all probably the greater portion, if not all, of the cases of bone aneurism were originally medullary sarcomata. He agrees with Gentilhomme that while these tumors may have the characteristics of aneurisms, their etiology and the mechanism of their development are quite different. The question, therefore, to be decided is whether the term "bone aneurism" should be continued in the literature or whether we should refer to these cases as pulsating sarcomatous hematoma of bone.

83. **Resection of the Fifth Nerve by the Orbital Route.**—Cook gives in detail the method used for resecting the second branch of the fifth nerve at the foramen rotundum, bringing the distal end to between the alveolus and the upper lip, thus three inches away from the proximal end and turned in another direction, devised by Dr. Melancthon Storrs. The description of the operation is given as follows: The patient is put half reclining in a rocking chair, wedged with sand bags. One assistant is necessary to give the anesthetic and a second to hold the retractor.

> The lower edge of the orbit can easily be felt through the skin. Make a clean incision along this edge, from the inner to the outer angle of the orbit, through the tissues, including the periosteum, down to the bone. Then, with a blunt instrument, carefully elevate the periosteum from the floor of the orbit, going well back and exposing the sphenomaxillary fissure. Lift the eyeball out of the way with a spoon-shaped retractor inserted under the periosteum. Usually a bluish spot will appear, showing the situation of the infra-orbital nerve, covered by a thin plate of bone, in its canal in the floor of the orbit. Should there be any difficulty in locating the nerve, it can easily be done by passing a probe into the infra-orbital foramen and up into the orbit. Having located the nerve, with a chisel or any suitable instrument, crush the thin plate of bone covering it. The nerve can then be easily hooked up and brought into view. The infra-orbital artery is usually torn at this time, and bleeds for a few moments; but it is of no importance and will soon take care of itself. Having hooked up the nerve, ligate it securely with a piece of silk passed around it with an aneurism needle. Then cut the nerve, leaving the ligature fastened to the proximal end of the cut nerve. We now have the nerve under perfect control. By making a slight traction on the ligature we can bring the nerve into view, and by following it on can readily crush down the thin wall of the canal, removing the bone fragments with suitable forceps. When the nerve enters the sphenomaxillary fissure, it passes out of the bony canal, and is only surrounded by soft structures, which can easily be hooked or wiped away. Should the sphenomaxillary fissure be narrow, and not readily admit the introduction of instruments, it can easily be widened by inserting a suitable blunt instrument and by wedging or widening the walls. It is remembered that the upper wall of this fissure is the strong wing of the sphenoid bone, and that the lower angle is the thin wall of the antrum. If either bone should break in these manipulations, it would be the wall of the antrum which would be crushed down and out of the way, and would cause no trouble. Having the nerve thus free to the foramen rotundum, next slip the ends of the silk ligature through a loop of wire, held with a small snare (the Jarvis snare of the rhinologists). The loop of wire in the snare is passed down the nerve to the foramen rotundum, just as a tunnel sound is passed over a filiform bougie. When the loop of wire reaches the foramen rotundum it is closed, and the nerve is cut and removed. To return now to the distal end of the nerve. Separate the integument from the bone down to the infra-orbital foramen, gather up with a hook the mesh of nerves going to the cheek, and drag the divided nerve through the foramen. Storrs then puts the nerve into the loop of a threaded needle and carries it down into the mouth, leaving the end which has been in the infra-orbital canal suspended between the alveolus and the upper lip; this end he cuts off even with the mucous membrane. This was for the purpose of preventing any possible restoration of any communication between the peripheral branches of the nerve and the stump left at the foramen [illegible] lete the operation, place a small gutta-percha [illegible] track of the nerve, extending from near the [illegible] to the surface. Suture the skin wound. The drain should be removed at the end of twenty-four hours.

He says the operation is very simple and can be performed on elderly and feeble people with but little shock. Relief is immediate in all cases and permanent cure is effected in many. Scarring is insignificant and the patient is not long confined.

85. **Drowning by Fecal Vomit.**—Andrews reports two cases in which he thinks this accident occurred. The conclusions are given as follows:

1. Flooding of the air passages by fecal vomit is a real danger, and probably has caused many unexplained deaths. 2. Resuscitation is impossible or very difficult. 3. The fluid may flow by gravity through the relaxed stomach sphincters directly out of the intestine where it has accumulated in enormous quantities. 4. The accident occurs with great suddenness and with a stomach supposedly empty. The suffocation may be so complete that no outcry is made and may not be noticed by the attendant. 5. It may occur as late as an hour after anesthesia, or at any time until consciousness is restored. 6. We have no evidence that it can occur during consciousness even in extremis. 7. After septic laparotomy, patients, when returned to bed, should be watched, without even momentary intervals, to full consciousness. 8. A suggestion made to me by Dr. McArthur that as many as possible of such cases be operated under cocain anesthesia, seems to me sound in the light of the above report.

86. **Splenic Infections.**—Stavely reports two cases; in one he considers the diagnosis of splenic abscess with perforation of the kidney and discharge of pus *per urethram*. The abscess was opened, but full exploration was not attempted. It was irrigated with salt solution and closed. The patient recovered with a small sinus. The second case was one where a diagnosis was made of displacement of the spleen, malarial hypertrophy, hemorrhage, suppurative perisplenitis, infective splenitis, thrombosis of the splenic vessels and infarction. The spleen was removed, and found greatly enlarged, soft and friable and densely engorged. The parenchyma and retiform spaces of the organs were infiltrated and greatly distended with blood extravasation and with some hypertrophy of the retiform framework. Cultures from the organ yielded growths of the *Staphylococcus pyogenes albus* and *Bacillus coli communis*.

87. **Typhoidal Gall-Bladder Perforation.**—Erdmann reports the case of a woman, 46 years of age, on whom cholecystectomy was performed, and adds 3 more to those already collected by Keen and analyzes them. All the cases that recovered were operated ones: 4 out of 7. The diagnosis depends on a careful and thorough study of the cases, stress being placed on the original site of pain, and bearing in mind that pain in this region may come from perforating ulcer of the stomach at its duodenal end, or from the duodenum itself or the gall-bladder, and it may be also the pain of acute pancreatitis. The only treatment is operative. He prefers incision through the rectus muscle rather than at its outer border, or in the median line, as this gives the best exposure and the least possibility of hernia. Cholecystectomy is the only thing to do; the friability of the tissues is against the repair of the perforation. In the 2 fatal cases, the operations were incomplete, leaving only one in the 5 fatal cases where complete operation was done.

90. **Primary Carcinoma of the Appendix.**—From his study of the signs, symptoms and anamnestic data, Moschcowitz concludes that we can not give an exact estimate of the frequency of the condition. It is rare as compared with inflammatory disorders of the appendix, but so many new cases have been reported during the last few years that we may have to modify our opinion as to its extreme rarity. Apparently all primary carcinomata begin in the mucosa and it is probable that they take their origin in some preceding inflammatory process. The disease is most frequent at the time of life in which inflammatory diseases of the appendix are most common. This accounts for the early age of the cases reported. It is more frequent in the female than in the male sex, the statistics being about three to one. If it is proved true that primary carcinoma of the appendix originates in prior inflammatory processes, it will be an additional argument in favor of the removal of the appendix when once diseased.

Medical Fortnightly, St. Louis.

June 25.

93 Factors Affecting the Condition of the Kidney. Byron Robinson.
94 Briefs on Mental Diseases. F. Savary Pearce.
95 An Incubator for Delicate or Premature Infants. Vitray P. Blair.
96 Atresia of the Uterus. Report of a Case. J. A. Young.

Northwestern Lancet, Minneapolis.

July 1.

97 Some Therapeutic Uses of the X-Ray. W. P. Spring.
98 A Dispensary for Tuberculosis in Minneapolis. Henry L. Ulrich.
99 The Organized Medical Profession. J. W. Andrews.

Bulletin of the American Academy of Medicine, Easton, Pa.

June.

100 "Muck-rake" Methods in Medical Practice. Charles McIntire.
101 *Time Allowance in the Combined Collegiate and Medical Course. (Second report.) A. L. Benedict.

101.—See abstract in THE JOURNAL, xl, p. 1527.

Southern Practitioner, Nashville, Tenn.

July.

102 Address of Welcome, Association of Medical Officers of the Army and Navy of the Confederacy at New Orleans. Stanford E. Chaille.

Kansas City Medical Record.

June.

103 Hysteria. I. A. Johnson.
104 Alcohol (C_2H_6O). E. E. Gilmore.

St. Paul Medical Journal.

July.

105 The Organized Medical Profession. J. W. Andrews.
106 Biographical and Literary Notes on Paracelsus. Charles Greene Cumston.
107 Urethral Stricture. F. D. Patterson.
108 Tuberculosis of the Peritoneum. John Lyng.
109 Ureteral Dilatations, Constrictions and Spirality. Byron Robinson.
110 Subcutaneous Paraffin Injection. A Case of Eighteen Months' Standing. Two Mishaps and a New Syringe. Albert C. Heath.

Northwest Medicine, Seattle, Wash.

June.

111 Progressive Pernicious Anemia. S. J. Holmes.
112 Methodical Training in Surgical Technic. R. C. Coffey.
113 Lessons from the Life of Pasteur. (Concluded.) John G. Clark.
114 Rational Therapeutics. Wilbur N. Hunt.
115 Purpura Hemorrhagica Due to Ptomain Poisoning. George A. Tripp.

Richmond Journal of Practice.

June.

116 The Use and Abuse of Nitrites. A. B. Greiner.

Fort Wayne Medical Journal-Magazine.

June.

117 The Vaginal Segment of the Ureter. Byron Robinson.
118 The Modern Treatment of Entropion. Albert E. Bulson.

Hot Springs Medical Journal.

May.

119 Spring Medicine. A. H. Ohmann-Dumesnil.

Pacific Medical Journal, San Francisco.

June.

120 The Collection of Medical Journal Subscriptions. C. F. Taylor.
121 Some Random Comments on the American Medical Association. Ethan H. Smith.

Journal of the Eye, Ear and Throat Diseases, Baltimore.

May-June.

122 Dermoid Cyst of the Conjunctiva. Francis M. Chisholm.
123 Operation for Extensive Maxillary Necrosis from Antral Empyema. L. R. Culbertson.

Columbus Medical Journal.

June.

124 Scarlet Fever. George M. Waters.
125 Pleurisy: Causes and Symptomatology. R. A. Kidd.
126 *Frambesia, Morula Smallpox, Cuban Itch.* George W. Mangus.
127 The Inadequate Teaching of Hygiene in the Public Schools. Frank Warner.
128 Case 1: Mercurial Poisoning. Case 2: Femoral Aneurism. W. J. Means.

New Orleans Medical and Surgical Journal.

July.

129 *Appendicitis, and the Attitude of the General Practitioner as Well as the Surgeon Towards It.* F. W. Parham.
130 Internal Antiseptic Therapy in the Treatment of Acute and Chronic Pathologic Processes. H. L. Ducrocq.
131 Some Notes on the Treatment of Phthisis Pulmonalis. E. M. Dupaquier.
132 Recent Advances in the Treatment of Diarrhea. R. B. Paine.
133 Ligation of Canaliculi for Extraction of Cataract Complicated with Dacryocystitis. Drs. Bruns and Robin.

Toledo Medical and Surgical Reporter.

July.

134 The Milk Supply of Toledo, with Demonstrations of Simple Forms of Milk Analysis. L. Marsh Dolloway and Albert Steinfeld.
135 Eczema. Edwin D. Tucker.

Western Medical Review, Lincoln.

June 15.

136 President's Address, Nebraska State Medical Association. A. B. Anderson.
137 Acne Vulgaris. E. E. Womersley.
138 Practical Skiagraphy. A. V. Robinson.
139 The Social Side of Pediatrics. I. C. Philbrick.

Woman's Medical Journal, Toledo.

May.

140 Asthenopia M. Jean Gale.
141 The Diagnosis of Pregnancy. Anna E Blount

Texas Medical Journal, Austin.

June.

142 Eclampsia W H. Allen.
143 Alcohol E. E Guinn.
144 Treatment of Fractures in a Country Practice W B Collins
145 Diluting and Washing the Blood in Certain Forms of Poisoning W. W. Greer.

Canadian Journal of Medicine and Surgery, Toronto.

July.

146 President's Address, Ontario Medical Association. J C Mitchell
147 Uterine Myomata and Their Treatment Thomas S Cullen
148 Diphtheria J. J MacKenzie
149 Waistbands and Corsets in the Genesis and Treatment of Movable Kidney and Associated Ptoses A Ernest Gallant
150 Cutaneous Anthrax Wilson Y Young

Carolina Medical Journal, Charlotte, N. C.

June

151 President's Address, Medical Society of the State of North Carolina A W Knox
152 Benefits Derived from a County Medical Society Albert Anderson
153 A Consideration of Injuries as Seen in Wood Working Factories C A Julian
154 The Normal Saline Solution. Its Physiologic Action and Uses George P Edwards
155 Some Experiences in Obstetrics Twenty Cases of Puerperal Eclampsia The Induction of Premature Labor Retained Placentæ L B McBrayer

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FOREIGN.

Titles marked with an asterisk (*) are abstracted below Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

June 27

1 History of Medicine Joseph Frank Payne.
2 Muscular Movements and Their Representation in the Central Nervous System Charles E Beevor
3 *The Etiology of New Growths Keith W Monsarrat
4 *A Criticism of Current Doctrines Concerning Hernia Edward Deanesly
5 Etiology and Treatment of Mucomembranous Colitis Dr Bottentuit.
6 Case of Perforation of the Aorta by a Pin Accidentally Swallowed Isambard Owen
7 The Epidemiology of Plague Note on the Fleas of Rats Frank Tidswell
8 Potassium Permanganate in the Treatment of Lupus J Hall-Edwards

3. **New Growths.**—The points of Monsarrat's article are summarized by him as follows:

1 Cell activity and cell type must always be the resultant of bio-chemical reaction of the principles of which the researches of Ehrlich and others have enabled us to obtain some information 2 Cell proliferation as a form of cellular activity is always the resultant of such reaction When it takes place as the result of increased availability of normal food material, the new cells produced conform to the type of the parent cells When it follows the action of assimilable materials of abnormal constitution new cell types are evoked, variants on the type of the parent cells 3 Cell proliferation of the latter type takes place in certain microparasitic infections 4 The new cell types thus evoked exhibit various degrees of instability 5 In the granulomata (Infectionsgeschwulste) their stability is considerable, in certain growths which result from infective agents (for example, condyloma) the equilibrium of the new type appears to be stable 6 In the so called true tumors cell types arise as variants on the normal cells of the organ or tissue of origin The ways in which such cell variants may be evoked is not discussed, but that they may result in some cases from the action of micro parasites is a reasonable view 7 These cell types are stable, their stability is due to the capacity of the particular variant to attach to itself and assimilate material in conformity with its type 8 In the simple tumors they are only locally stable and are not immune to reactionary influences outside the tissue of origin and the normal relationships of parenchyma and connective tissue 9 In the malignant growths they possess a wide range of stability and immunity, and the degree of this is the measure of their capacity to form metastases, while local infiltration the other histologic characteristic is dependent on the principle of chemotaxis the cells extending in those directions in which their variant and aberrant bio chemical affinities enable them to annex material conformable to the building up of their characteristic type

4 **Hernia.**—Deanesly holds that oblique inguinal hernia is always in a measure congenital, due to a pre existent patent funicular process To prove that the sac of any oblique hernia is ever formed by an independent protrusion of the peritoneum unconnected with the processus vaginalis, is absolutely unsupported by any evidence and the only possible proof of it would be the demonstration of the co-existence of an unclosed processus vaginalis with a separate hernial sac alongside of it. This, so far as he knows, has never been demonstrated. The question of congenital or non-congenital origin of ordinary inguinal hernia has, he says, some practical importance. The first deduction is that every case could be certainly cured by the efficient removal of the congenital malformation, that is, the sac—provided the operation is done soon after the first appearance of the hernia or, at any rate, before the presence of the hernia or the pressure of the truss have produced secondary distension or atrophy of the inguinal canal muscles. Delay, therefore, whether the truss is worn or not, increases the difficulty of radical cure. In infants the truss is sometimes an efficient method of treatment, as it enables the patent funicular process to undergo its natural obliteration.

The Lancet, London.

June 27

9 *Muscular Movements and Their Representation in the Central Nervous System. Charles E Beevor
10 The History of Medicine Joseph Frank Payne
11 On the Diagnosis of the Cause of Jaundice Sidney Phillips
12 *Note on the Persistence of the Gruber-Widal Reaction in Convalescence from Typhoid Fever H S. D Browne and K. E Crompton.
13 *On the Use of the Roentgen Rays in the Diagnosis of Pulmonary Disease J. F Halls Dally
14 A Brief Note on a Bacillus in a Case of Ulcerative Colitis Theodore Fisher.
15 Three Cases of Cholecystectomy Frederic S. Eve
16 The Prevalence of Pneumonias in Infancy S Vere Pearson
17 Respiratory Crises in Grave's Disease J. Gordon Sharp

9. **Muscular Movements.**—The third and fourth lectures of Beevor appear in this issue. The last one discusses the cerebral localization of the various movements, reviewing what has been published from time to time by various authorities, and giving the results of experiments of the author in connection with Sir Victor Horsley in regard to the movements occurring on the same side of the cortex with irritation

12. **The Gruber-Widal Reaction.**—From a study of 68 cases of the convalescent type where the Gruber-Widal reaction was tested at various periods after recovery from typhoid, Browne and Crompton find merely 3 cases giving a positive reaction, and one of these only two months after the attack This is a much smaller proportion of positive reactions than that given by some other authorities, the difference being partly due to the inclusion by authors of cases in which only a few weeks had elapsed from the original attack, and partly to the low dilutions used by them. A dilution of 1 to 10 was first used in all of the authors' cases. When any indication of reaction occurred weaker dilutions were employed. Other observers have used dilutions down to as low as 1 in 2 and 1 in 9. If they themselves had considered, the authors say, a positive reaction of 1 in 10 as sufficient, their list would have shown 8 more positive reactions, bringing their proportion up to 11 out of 68. While they do not doubt that the reaction of low dilution shows that the blood in some cases retains for a long time the specific agglutinative action of the *Bacillus typhosus*, yet they wish to insist that this need lead to no error of diagnosis, provided that sufficiently high dilutions, that is, 1 in 20 or 1 in 50, are proceeded with in cases in which there is any doubt. Their findings agree with those of Elsberg, who sees no relation between the severity of the attack and the duration of the reaction.

13. **Pulmonary Tuberculosis.**—Dally finds from his studies that the Roentgen rays are an important adjunct to the methods of physical investigation heretofore in use in testing for tuberculosis, and that unilateral limitation of diaphragmatic movement as seen by the fluoroscope is often the earliest indication of incipient disease. He holds that by the aid of the Roentgen rays pulmonary tuberculosis can be diagnosed at an earlier stage than by any other means at our disposal.

Archives Gen. de Medecine, Paris.

Last indexed XL, Page 877.

18 (LXXX, 8) *Rachitisme tardif et chondromes multiples Boinet and Stephan.
19 (No 9) Le souffle d'asthénie cardiaque Lamacq
20 (No 10) Hemiplégie à répétition d'origine urémique. J Le Calve.
21 (No 11) Sur 2 cas de meningisme uricémique G Carrière
22 (No 12) Pathogénie génerale des affections buccales. J. Chompret
23 (No 13) *Study of Syphilis in the Country in Russia. Marcou—La syphilis du paysan en Russie
24 Hemorragie dans le tubercule quadrijumeau antérieur droit Bouchaud One case

25 *Hepatic Syphilis from a Surgical Standpoint. C. G. Cumston (Boston, Mass.).—La syphilis hépatique au point de vue chirurgical.
26 Des modifications respiratoires produites dans la tuberculose pulmonaire par le traitement tracheal. Mendel.
27 (No. 16.) Two Distinct Cancers on Same Breast. H. Morestin.—Epithélioma du mamelon et epithélioma glandulaire de la mamelle. Névralgie intercostale.
28 Les syndromes fonctionnels de la pathologie rénale et l'insuffisance renale. L. Bernard.
29 *Du tremblement provoqué ou exagéré par l'opothérapie surrénale ou thyroidienne. Boinet (Marseilles).
30 (No. 17.) *The Blood in General Paralysis and Tabes. M. Klippel and E. Lefas.—Le sang dans la paralysie générale et le tabes.
31 Traitement de la stérilité pas les eaux sulfureuses de Luchon. J. de Segrais.
32 De l'intervention chirurgicale dans les inflammations chroniques du gros intestin (rectum excepté). P. Launay.
33 (No. 18.) Des lesions de la couche musculeuse de l'estomac dans les gastrites non compliquées d'obstacle mécanique. G. Hayem and G. Lion.
34 Glycosurie et hypophyse. P. E. Launois and P. Roy.
35 (Nos. 19-21.) Dietary in Temperate Climates. E. Maurel.—Aperçu général sur la ration d'entretien pendant les saisons intermediaires dans les climats tempérés.
36 Treatment of Consequences of Phlebitis. H. Hannequin.—Les suites de phlébites.
37 Syndrome surrenal chronique experimental. R. Oppenheim and M. Loeper.
38 Etude du polyadenome polypeux et de l'adéno-papillome de l'estomac. J. Bret (Lyons).
39 Syphilis of Liver in Adult. E. Boix.—La syphilis du foie chez l'adulte.
40 (No. 23.) More than the Physician, the Surgeon Should Make Blood Examinations. J. Silhol.—Plus encore que le médecin, le chirurgien doit examiner le sang des malades.
41 Varicocele tubo-ovarien. G. Michel. One Case.
42 (No. 24.) *Action de la sécrétine et action de l'acide dans la sécrétion pancréatique.* M. C. Fleig (Montpellier).
43 De l'insuffisance respiratoire dans la tuberculose pulmonaire. Mendel.
44 The Americans and Yellow Fever. M. Boigey.—Les Americains et la fièvre jaune.

18. Tardy Rachitis and Multiple Chondromata.—Boinet shows that during the entire course of the growth of the skeleton there are liable to be disturbances in its normal development, involving its various tissues. The changes in the bones regarded as tardy rachitis, whether or not they belong in the category of true rickets of early childhood, should be included in these deviations in development. With them belong also the chondromata that develop in association with these tardy bone lesions. He illustrates a typical, very pronounced case. The incidental cause of the formation of the cartilaginous tumors seemed to have been a traumatism. He also notes that an eruptive fever preceded the appearance of the bone malformations and the swelling of the epiphyses in both this and another case. Consecutive to a fracture of the ankle the right calcaneum in his case became infiltrated with a cartilaginous product and histogenetic troubles rapidly developed, leading to benign gelatinous degeneration.

23. Syphilis in the Country in Russia.—Marcou was sent by the French government to study medical conditions in Russia, and expatiates on the differences between syphilis there and in other countries. Outside of the large towns, in which the conditions approximate those in western Europe, throughout the country districts, entire villages and scattered communities are decimated by syphilis, which the habits of the Russian peasants allow to spread rapidly by extra-genital infection. Women and children are peculiarly the victims owing to their promiscuous use of articles, clothing, etc., and their more confined life. The habit of kissing sacred images and acquaintances on certain feast days aids in the dissemination of the virus.

25. Hepatic Syphilis from Surgical Standpoint.—Cumston's report of 3 cases and review of the literature is similar to that published previously in this country and recently reviewed in these columns, page 1539.

29. Tremor Induced by Opotherapy.—Boinet has observed 10 cases in which tremor was induced by thyroid or suprarenal treatment. Analyzing them, he finds that the tremor is not a sign of intoxication, but merely that the limit dose has been reached. The cases of Addison's disease that exhibited it were the ones most benefited by the opotherapy. The tremor may serve to differentiate this disease and exophthalmic goiter after test of opotherapy.

30. The Blood in General Paralysis and in Tabes.—Klippel reports the result of examination of the blood in 31 cases of these affections. The blood count always showed a lack of normal cellular balance. The proportion of polynuclears was increased at first, and later of the lymphocytes, in general paralysis, and in tabes there was also a red anemia and reactional eosinophilia. These facts suggest infection, and are valuable for differentiating dubious cases as general paralysis and possibly tabes may be assumed to be of an infectious nature.

Archives de Neurologie, Paris.

Last indexed XL, page 1175.

45 (XXV, May.) Etude sur la manie. S. Soukhanoff and P. Gannouchkine.
46 Nouvelles observations de névrose d'angoisse. H. Hartenberg. Three cases.
47 Physio-psychologie des religieuses; les religieuses de Port-Royal. C. Binet-Sanglé. (Concluded. Fifth series of five observations.) Historical.
48 (June.) Note sur un cas de bestialité chez la femme. Ch. Féré.
49 La clinique psychiatrique de l'Université de Giessen (Hesse). P. Serieux.

Revue de Medecine, Paris.

Last indexed XL, page 1265.

50 (XXIII, 4.) *Manifestations cardio-vasculaires de l'hérédo-dystrophie para-tuberculeuse. E. Mosny.
51 *L'indicanurie dans les affections de l'estomac (of stomach). J. Carles (Bordeaux).
52 Deux cas de fièvre typhoide à localisations anormales (colo-typhus). V. Le Goic.
53 (No. 5.) *Trois cas de broncho-pneumonie continue, et remarques sur l'hospitalisation des pneumopathes. G. Rosenthal.
54 Painful Lassitude as Epileptic Equivalent. Ch. Féré.—Note sur la courbature comme equivalent épileptique.
55 Syndrome de Weber from Injury of Right Orbit in Fencing. Bichelonne.—Coup de fleuret dans l'orbite droit. Syndrome de Weber. *Hystéro-traumatisme probable.*

50. Cardio-Vascular Lesions in Children of Tuberculous Parents.—The taint in the progenitors, infectious or toxic, especially tuberculosis, entails on the children a liability to congenital hypoplasia of ovular or ontogenetic origin, affecting the tissues which have a common blastodermic origin. When the cardio-vascular apparatus is affected, the lesions are distinguished by the prolonged latency, the consequence of the extreme tolerance of the organism for the lesions to which it seems to have adapted itself before birth. The revelation of their presence comes late, usually on account of some stress which upsets the balance established between the organism and the system marked by hypoplasia, or under the influence of some intercurrent infection or intoxication which brings into evidence its primal insufficiency. This latency is particularly striking when compared with the symptoms from acquired lesions of the same localization which are so often the cause of grave functional disorders almost from the start. This fundamental difference indicates the prognosis and the therapeutics. The lesions are not tuberculous in nature. The subjects are frequently free from the slightest tuberculous lesion and do not seem predisposed to them nor rendered immune against them. Early or late, however, the manifestations of this "para-tuberculous heredo-dystrophy," as Mosny calls it, become apparent, but the chlorosis, pure mitral stenosis, stenosis of the pulmonary artery or aorta, and diffuse arterial aplasia, alone or combined, have each their special features which allow them to be differentiated from acquired lesions.

51. Indicanuria in Stomach Affections.—Carles concludes from study of 22 subjects that indicanuria is not observed in hyperchlorhydria, but is almost always constant in case of deficient secretion of the gastric juice or hydrochloric acid, and also in case of fermentations in the stomach. The liver functions do not seem to have much to do with indicanuria, but it appears to be intimately connected with the functioning of the gastric mucosa. Indicanuria indicates not only the measure of gastro-intestinal fermentations but is also an index of the gastric secretions.

53. Continuous Bronchopneumonia.—Rosenthal's 3 cases were all due to the enterococcus of Thiercelin, and commenced with ordinary bronchopneumonia. The long duration, predominance of general phenomena, attenuation of the functional signs, slight hyperthermia, sometimes polycyclic, and the cachexia, simulating that of tuberculosis, are all included in the syndrome. No Koch bacilli could be discovered. The patients were pining in the hospitals when the fresh-air cure was instituted with prompt and rapid recovery in each case.

Semaine Medicale, Paris.

56 (XXIII, 22.) Hazardous Risks and Life Insurance According to the Transactions of the Examiners Congress. F. Larnarier.—Risques tarés et assurance sur la vie d'après les travaux du congrès de Paris. See report on page 1785 of last volume of THE JOURNAL.
57 Letter from America. F. Munch.—Traitement du shock chirurgical aux Etats Unis.
58 (Nos. 23-24.) Detailed Report of German Congress of Surgery.
59 Letter from America. F. Munch.—Sur le parasite de la variole.
60 Ibid. Traitement opératoire des rétrodeviations utérines.
61 *Influence du paludisme dans l'apparition du béribéri. C. L. Urriola (Panama, Colombia).
62 *Le traitement des tuberculeux dans les colonies familiales. H. Erni (Gersau, Switzerland).

61. **Influence of Malaria on Beri-Beri.**—In Urriola's experience at Panama he has examined the blood of 22 patients with beri-beri, and invariably found the malaria parasite. The beri-beric symptoms, he mentions, always followed the onset of malarial symptoms. He thinks that there is more than a mere coincidence in this fact. Almost all the beri-beri deaths were due to heart complications, and loss of memory was frequent and so complete in one instance that the subject was unable to follow any occupation. The heart symptoms of the beri-beri were dyspnea at the slightest effort, embryocardia and increasing asphyxia to fatal suffocation, but no true cardiac souffles were noticed. Manson's "pendulum" sign has only relative value, as the memory suffers in beri-beri and the malaria induces a characteristic endocarditis and probably also a myocarditis with granulo-fatty degeneration. In most cases, therefore, it is impossible to establish a difference between beri-beri and malarial neuritis, and in fact, Urriola thinks there is no difference, and that the two are identical. Before incriminating the humidity or the food in the etiology of beri-beri we must first exclude or cure the malaria. He has been very successful in curing beri-beri by applying suspension, quinin, iron, and cold hydrotherapy. His patients were completely cured by 15 to 30 applications of suspension supplementing the other measures.

62. **Treatment of Consumptives in Family Colonies.**—Erni describes the homes offered to tuberculous subjects on the slope of the Righi. There are several villages at different altitudes where the families make a practice of taking tuberculous subjects into their homes. The fare is simple, little meat, but eggs and milk in abundance, five or six meals a day, and the host watches over his guests to see that no undue exercise is taken. In fact, long walks are impossible as the ascents are so steep. The price of these accommodations is not more than $4.20 a week, and the inmates thrive under the enforced repose and patriarchal conditions, as well as in pretentious sanatoria. Some families take only 2 or 3, others as many as 8, and during the last ten years nearly 2,000 tuberculous guests have been thus received in the canton of Schwyz. The village physicians have looked after them at reduced rates. Erni recommends this plan of mountain family colonies as having proved its usefulness at the minimum of expense. Nothing has been observed during the ten years that suggests that any of the hosts have become infected from their guests. The plan offers a means of gain to these mountain villages, which they are glad to exploit under the supervision of the local physician. The lack of comfort is no detriment.

Beitraege z. Klin. Chirurgie (v. Bruns'), Tuebingen.

Last indexed XL, page 342.

63 (XXXV, 1.) *Ueber die Tuberkulose der männlichen Geschlechts-Organe. von Bungner (Hanau).
64 Study of Chemical Composition of Aseptic Wound Secretions. V. Lieblein (Prague).—Zur Kenntnis der chem. Zusammensetzung des asept. Wundsekretes.
65 Luxations of Pelvis. P. Linser.—Ueber Beckenluxationen. One case.
66 *Zur Ligatur-Behandlung der Hemorrhoiden. E. Ehrich (Rostock).
67 Hernias of Bladder. Lossen (Carlsruhe).—Ueber Harnblasenbruche.
68 *Zur Statistik und Kasuistik des primären Extremitaten Krebs (cancer). K. Franze (Innsbruck).
69 *Die Nephrotomie und ihre Folgen (consequences). O. Langemak (Rostock).
70 Tavel's Salt Soda Solution. H. Kuttner (Tubingen).—Ist die physiol. Kochsalzlosung durch die Tavel'sche Salzsodalosung zu ersetzen?
71 (No. 2.) Carbon Dioxid Narcosis. O. Rothschild (Breslau).—Ueber Kohlensaurenarkose.
72 Experiences with Spinal Cocainization at Breslau. G. E. Stumme.—Unsere Erfahrungen uber die Cocainisirung des Ruckenmarks nach Bier.
73 Remote Results of Operative Treatment of Cleft Palate. W. Kassel (Breslau).—Zur op. Behandlung der angeborenen Gaumenspalte mit bes. Berucksichtigung der funct. Erfolge.
74 *Splenektomie bei dem primären Sarkom der Milz (spleen). W. Simon (Konigsberg).
75 *Rectum-Tumor und Corpus liberum der Bauchhohle. J. Elter (Rostock).
76 *Zur Anatomie und Klinik der Struma maligna. O. Ehrhardt (Konigsberg).
77 Zur Operation der Scrotalhernien bei Kindern (in children). W. Anschutz (Breslau).
78 *Considerate After-Treatment of Septic Operations. H. Kuttner (Tübingen).—Schonende Nachbehandlung septischer Op.
79 (No. 3.) *Ueber die Schneiderlin'sche Skopolamin-Morphium Narkose. E. Blos (Carlsruhe).
80 Zur Kasuistik der Schadel- und Gehirnverletzungen (skull and brain injuries). Amberger (Frankfurt a. M.).
81 Kosmetische Behandlung von Sattelnasen mit Vaselin-Injektionen. M. Wassermann (Munich).
82 *Ueber Spontan-Gangrän der Extremitäten. O. v. Wartburg (Zurich).
83 *Foreign Bodies in Air Passages. E. Monnier (Zurich).—Ueber Fremdkorper in den Luftwegen und die Bedeutung der Bronchoskopie bei solchen.
84 *Ueber Hydronephrosis intermittens. J. Michalski (Zurich). (Commenced in No. 1.)
85 Operating During First Whiffs of Ether. H. Kuttner (Tubingen).—Das Operiren im Etherrausch.
86 *Application of Electro-magnet for Removal of Foreign Iron Bodies in Bladder. F. Hofmeister (Tubingen).—Anwendung des Elektromagneten zur Entfernung eiserne Fremdkorper aus der Harnblase.

63. **Treatment of Tuberculosis of the Male Sexual Organs.**—Bungner reports continued success with his method of treating tuberculosis of the male genitalia. It includes what he calls "high castration," that is, castration with evulsion of the vas deferens. Instead of dividing the vas at the ordinarily accessible point, he mobilizes and pulls steadily on it until it breaks high up. About four-fifths of the vas can usually be removed in this way, and his experience during nine years has demonstrated that the remaining portion soon heals. His method also includes direct injection into the vas deferens of a 10 per cent. glycerin solution of iodoform. He injects 3 or 4 gm. upward and 1 or 2 downward. Experiments on the cadaver show that the solution permeates the entire generative tract on this side, even distending the seminal vesicles. His experience also confirms von Bruns' that tuberculosis of the generative tract is almost invariably ascending, so that by this method of high castration all or nearly all the morbid parts are removed and the rest soon heals when freed from irritation from below. He has treated 18 patients by this high castration, which he recommends for tuberculosis restricted to the testicles and vas alone. He supplements it with the intracanalicular iodoform injections when there is reason to think the entire tract is invaded, including the seminal vesicles and prostate, or applies these injections alone. As a last resort, he ablates the tract the entire length of its course. The latter is very seldom necessary. All of his last series of 10 were cured, and all but 2 of the remainder. This is a total of 86.6 per cent. cured in contrast with Bruns' percentage of 46 per cent. cured by unilateral castration and 56 per cent. by bilateral, in 111 cases followed for three to thirty-four years. Simon has reported from Heidelberg 66.3 per cent. cured in 92 cases, and Kocher 26.3 per cent. in 45. Injurious after-effects that might be attributed to the castration were not found by Bruns in any of the 33 examined and by Simon only once in 34. Bungner details the particulars of his last series of 11 cases, and in the colored reproduction of the testicles, etc., and vas from a cured case he shows how the vas was diseased far above the point where it is usually severed. He has found that the epididymis is generally first involved and the vas next, the testicles being affected much less frequently than the latter. Only in the rarest cases were the prostate and vesicles also diseased. In 2 of his cases, high castration plus a single intracanalicular injection resulted in the complete healing of the lesions above, which were to have been removed later in a second intervention. One was a man of 39 and one a boy 4 or 5 years of age.

66. **Ligature Treatment of Hemorrhoids.**—Ehrich thinks that ligature is far superior to excision or cauterization in treatment of hemorrhoids, as far as the simplicity of the technic and of the after-treatment is concerned. At the same time it guarantees better against complications of various kinds, and is fully the equal of cauterization in respect to the ultimate outcome. He has thus treated 58 patients and 14 others plus excision of some of the nodules. In 16 cases he supplemented

the ligature by injection of one or two drops of a 90 per cent. solution of carbolic acid, protecting the sound parts with alcohol. Three cases were treated by these injections alone. All of his total of 98 patients were cured in ten to fourteen days; a few required a single injection of morphin on account of pain in the region. Catheterization was necessary in 11 cases. The nodules drop off in dry necrosis. Recurrence after ligature treatment occurred in only 4, and in 4 the benefit was merely partial, but 68 have been permanently cured. The only mishap in his experience was the death of one patient the seventh day with symptoms of embolism of the lungs, who had been treated by ligatures alone.

68. **Primary Cancer of the Extremities.**—Franze has had occasion to observe 21 cases of a malignant growth on an extremity. In 11 it developed at the site of some old injury, mechanical, thermic or chemical. In this group the glands are involved very late and the possibility of early removal of the neoplasm renders the prognosis good; 69.7 per cent. were cured and 30.29 per cent. succumbed. In another group were 5 cases of primary cancer on sound skin, the back of the hand in 3 and the thigh and heel in 1 each. None of these patients died. His third group includes those in whom the cancer developed from a congenital wart or maternal mole, 5 in all, and all fatal. The back of the hand was involved in 2, the sole in 1, the forearm in 1, and the left calf in the fifth. He has found 8 similar cases on record, all likewise fatal, and only 1 has been published in which there has been no recurrence since ablation. They usually occur in elderly persons and run their course in a year and a half. He thinks that the physician ought to impress on his patients the necessity of prophylactic removal of these congenital warts and moles, including the pigmented nevi, the latter on account of the liability of melanosarcoma. The mortality of the combined statistics shows 65.2 per cent. cured and 34.8 per cent. mortality or omitting the malignant third group, the mortality has been 30.3 per cent., with nearly 70 per cent. cured.

69. **Consequences of Nephrotomy.**—Langemak warns that his experience with rabbits indicates that any deep incision into the kidney induces an infarct, corresponding in size to the artery that is severed. Also that coagula may plug the entrance into the ureter, causing temporary insufficiency of the kidney. This latter danger should never be forgotten in operating on the kidney, and hemorrhage into the organ should be avoided and all blood in it should be carefully removed.

74. **Sarcoma of Spleen.**—The experience at Königsberg demonstrates that the spleen should be removed on suspicion of sarcoma, without waiting for definite and serious symptoms. In 7 cases operated on and published in the literature the results were favorable in 6, as also in a case personally observed. The latter patient was a woman of 38 from a malarial region, a multipara, who had noted at long intervals pains in the left half of the abdomen. The blood was apparently normal.

75. **Free Body in Abdomen.**—A supposed tumor on the rectum, protruding into the Douglas cul-de-sac, was extirpated and found to be a necrotic and calcified fibrolipoma that had been cast off from the omentum. It had lodged on and grown to the rectum. Similar lipomata were found scattered over the omentum at the autopsy, and evidences of carcinomatous degeneration were also discovered which explained the symptoms observed and credited to the bunch palpated in the Douglas sac.

76. **Malignant Struma.**—Ehrhardt remarks that malignant struma usually develops in a goiter, but not always. Ordinary goiter is movable as a rule, but the malignant struma does not move during the act of swallowing. This absence of movement was noted in 40 per cent. of the cases of malignant struma on record. He has collected 131 cases of carcinoma with glandular metastases in 49, and 107 cases of sarcoma with glandular involvement in 18. In operating general anesthesia should be avoided.

78. **Considerate After-Treatment of Septic Operations.**—Küttner hints that when a surgeon has been himself the subject of a septic operation he is better able to appreciate some of the details that add to the comfort of the patient. Among these is the use of drain tubes instead of gauze, as easier to change. If the temperature and pain do not increase, why not leave the dressings untouched for days? And if moist dressings are applied why not apply fresh ones outside and leave the one in contact with the wound undisturbed? The practice of cauterizing wounds with pure carbolic acid is particularly useful, as it reduces the secretions in the wound for days. A wet dressing soothes pain far better than a dry one. In replacing tampons in a crevice or narrow cavity, much pain is avoided by having the lips of the wound gently pulled apart by retractors. The wound surface should be touched as little as possible, and as soon as the acute inflammation is past, apply the salve dressings. If new incisions become necessary do not attempt local anesthesia, as it is liable to fail in the debility of extensive septic processes. Operate during the "ether drunk," that is during the first few whiffs of ether.

79. **Scopolamin-Morphin Anesthesia.**—This method of anesthesia was used in 105 cases at the Carlsruhe clinic. In the majority, Blos states, it proved "ideal." It failed in 29 cases, and in two-thirds of these ether had to be given to complete the operation. Hysteric and neurasthenic patients are liable to react with restlessness, palpitations and vomiting, even to small doses. The danger in this method of narcosis is from arrest of the circulation. There were respiratory disturbances in 9 of the 70 cases in which it was administered unmodified. In 4 of the 9 the disturbances were slight and spontaneously righted themselves at once; in 2 after massage had been applied to the heart and in one each after artificial respiration or wiping out the throat. A few vigorous pulsations of the heart—induced by the massage—had a particularly favorable action on the respiration. One patient died, the death explainable by advanced pulmonary lesions, nephritis and heart weakness. The narcosis is rarely so deep but what the subject can be roused by shaking and calling to him—a great point in its favor. He thinks that inhalation of oxygen might be useful in case of trouble. The mucous glands are paralyzed by this narcosis and consequently ether given afterward has none of the dangers as under other circumstances. His experience indicates that 10 dmg. scopolamin and 6 cg. morphin is the best dose to start with. After waiting an hour or an hour and a half, a second smaller dose may be given but can usually be dispensed with. Vomiting was noted once or twice in 12 of 99 cases. It was not accompanied by nausea. [The latest communication on the subject by Schneiderlin, the inventor of this method of narcosis, was reviewed very fully in THE JOURNAL of April 11, 1903, p. 1036.]

82. **Spontaneous Gangrene of the Extremities.**—Wartburg describes 3 cases of gangrene from embolism of the iliac or femoral artery, traceable to a valvular affection, and 1 due to an aneurism in the popliteal. He has also observed 5 cases in which the gangrene was due to thrombosis, evidently the result of a circumscribed endarteritis subsequent to some infectious disease. Pains in the limb had been noted as the first symptom. Amputation may cure in these cases as the prognosis is better than in the first group. The mortality in 32 cases of senile gangrene was 63.75 per cent. The gangrene is probably due to arteriosclerosis in senile as also in diabetic gangrene, of which he has observed 8 cases. The prognosis after amputation is more favorable in diabetic than in senile cases. All were cured in 6 treated by exarticulation of the knee, and 4 were cured in 7 after amputation of the thigh.

83. **Foreign Bodies in Air Passages.**—Monnier expatiates on the value of direct bronchoscopy and urges that we must not be deceived by the mildness of the symptoms noted after a foreign body has been drawn into the air passages.

84. **Intermittent Hydronephrosis.**—The details of 133 cases collected are tabulated, plus 8 unpublished ones.

86. **Extraction of Foreign Body from Bladder with a Magnet.**—An iron peg, 5 cm. long by 6 mm. wide, was inserted in the urethra by a young man and slipped into his bladder, where it could be seen by radioscopy. It was extracted by means of a Hirschberg portable magnet, the short tip used in ophthalmology being replaced by a long one, shaped something like

a catheter, considerably wider than the peg. A hair pin in a woman's bladder was also successfully removed with it.

Deutches Archiv f. Klin. Medicin, Leipsic.

Last indexed XL, page 1616.

87 (LXXVI, 1-3, Pribram Festschrift.) Zur Kenntnis der Callus-Bildung bei osteomalacischer Fracturen. H. Beckmann.
88 Beziehungen der Tetanie zur Epilepsie und Hysterie, nebst Mitteilung eines Falles von Tetanie bei Osteomalacie. E. Freund.
89 *Prophylaktische Wirksamkeit des Urotropins bei Typhus-Bakteriurie. E. Fuchs.
90 Mode of Action of Cotoin and Fortoin on Intestinal Content. R. Karb.—Wirkungsweise des Cotoins und Fortoins auf den Darminhalt.
91 Hyper- und metaplastiche Hematopoiese bei universeller Carcinose. L. Kast.
92 Ueber Wachsthumsstörungen der Knochen bei multiplen cartilaginösen Exostosen. K. Lippert.
93 Ueber die baktericiden Wirkungen des menschlichen Blut-Serums bei Gesunden und Kranken. W. Löwenstein.
94 Heat Sense. F. Neumann.—Zur Klinik des Würmesinnes.
95 Zum diagnostischen Werth der Lumbal-Punktion. G. Orglmeister.
96 *Zur Aetiologie des akuten Gelenk-Rheumatismus. C. Philipp.
97 Transcortical Disturbances in the Motor Apparatus. F. Pick.—Ueber transcorticale Störungen des Bewegungsapparates.
98 *Klinische Beobachtungen bei 10 Fällen von Diabetes insipidus. E. Pribram.
99 *Untersuchungen über Diabetes. L. Schwarz.
100 *Ueber die Tuberkulin-Reaktion. L. Zupnik.

89. Urotropin in Prophylaxis of Typhoid Bacteriuria.—The articles in this Festschrift in honor of Professor A. Pribram of Prague, all issue from his clinic. Fuchs states that urotropin administered in time to typhoid patients will effectually prevent bacteriuria later. He found bacilli in the urine in 26 out of 75 cases of typhoid fever, while in 40 treated with the urotropin, only one had bacteriuria, and in this latter case the drug had not been given as early as to the others. It must be commenced before the fever subsides, 2 gm. in an aqueous solution daily, and continued into convalescence to the latest date at which bacteriuria is liable to develop.

96. Etiology of Acute Articular Rheumatism.—Philipp believes that this disease is one apart from others, of entirely unknown etiology to date. No substance has yet been isolated from the blood or joint exudate which is pathogenic for any animal except the calf. Experiments with calves seemed to suggest a positive result and further tests with this animal are necessary. If the calves could be left with the mothers better results would probably be obtained than was possible under the circumstances in his experimental researches.

98. Clinical Pictures in Ten Cases of Diabetes Insipidus.—Besides the usual polyuria and polydipsia which in one case were superposed on a diabetes mellitus, nearly all the patients exhibited some affection of the central nervous system, especially genuine atrophy of the optic nerve. The peripheral nervous system was involved in a few, sciatica in some cases and exaggeration of the knee-jerk. The sexual functions were disturbed in nearly every instance. Evidences of arrested development were prominent in the younger subjects; in one case before the advent of the polyuria. In some instances there seemed to be a reversed proportion between the pulse and the polyuria. The heart beat and radial pulse were weak. In one case there was a hemorrhagic diathesis and in another incontinence of urine. All the patients were benefited by ergot and gradual deprivation of water, but a permanent cure was not obtained in any instance.

99. Study of Diabetes.—The practical conclusions of this comprehensive article state that in the dietetic treatment of diabetes the amount of fat to be allowed should be determined for each individual case by the intensity of the elimination of the acetone bodies. The tests showed a marked decrease in the elimination of the acetone bodies after administration of gluconic acid, a fact which, as Schwarz remarks, requires confirmation. The interposition of a day of fasting during the transition from a mixed to a diet free from carbohydrates, seems to reduce the acetone bodies at once and hastens the vanishing of the sugar. The tests also showed that the proportion of fats in the blood is above normal.

100. Tuberculin Reaction.—Zupnik does not think that this reaction is specific to the species but merely to the genus. The susceptibility of a tuberculous man is a hundred times greater than that of a tuberculous guinea-pig. He states that he has observed a case of tuberculosis of the kidney which, from both the clinical and pathologic points of view, seemed to be typical. The bacilli causing it, however, were not the Koch bacilli, but merely an acid-proof variety, apparently a smegma bacillus.

Deutsche Zeitschrift f. Chirurgie, Berlin.

Last indexed XL, page 1763.

101 (LXVIII, 1-2.) Obituary of Carl Nicoladoni. List of His Fifty-four Works.
102 *Experimental Sutures of Arteries. H. Amberg (Kocher's clinic, Berne).—Exp. Beitrag zur Frage der circulären Arteriennaht.
103 *Beitrag zur Myositis ossificans. Borchard (Posen).
104 *Ueber Geschwülste (tumors) des Musculus psoas und Musculus iliacus internus. H. Jacobstahl (Göttingen).
105 *Zur operativen Behandlung der Knie-Gelenk-Tuberkulose mit besonderer Berücksichtigung der Anwendung der Iodoform-Plombe nach v. Mosetig. N. Damianos (Vienna).
106 *Laparotomie und Ventralhernien. Silbermack and Hirsch.
107 *Die Lokalisation der Osteomyelitis in den Seitentheilen des Os sacrum und ihre Beziehung zu den Wachsthumsvorgängen. H. Gross (Riedel's clinic, Jena). Six cases.
108 *Ueber traumatische Accessorius-Paralyse nach Schädel-Basis-Frakturen. J. Krähenmann (Zurich).
109 Instrument for Introducing Wire Saw. E. Payr (Graz).—Instrument zur bequemen Führung der Gigli'schen Drahtsäge.
110 Ueber solitäre Darmstenosen. Hacker (Innsbruck).
111 Volvulus in einem 19-tägigen Säugling. M. Pescatore. One case; 19 days' infant.

102. Experimental Circular Suture of Arteries.—The experiments were made on 7 animals, including 2 horses. In 3 the lumen of the artery remained entirely permeable, and in 1 partially. An obliterating thrombosis occurred in 2, and is liable whenever the vessel is below a certain size. About 15 mm. seemed to be the limit. The walls of the vessels are thicker in man than in dogs, and Amberg reports that he has successfully applied a circular suture in a clinical case, invaginating the femoral vein with the artery over a magnesium prothesis shaped something like a napkin ring. Stubenrauch has experimented with this prothesis on the femoral artery in dogs, but thrombosis followed in every instance.

103. Myositis Ossificans.—The treatment of this affection can be only operative, removing the periosteum for 1 cm. if the morbid process be adherent to the bone. Two cases on record indicate that early massage might ensure the resorption of small foci of ossification. In 2 cases personally observed, the process spread from little islands of ossification in the interstitial connecting tissue, leading to hyperplasia and ossification from the proliferating perimysium. The growth was rapid and was removed in twenty-one and twenty-four days. In the 61 cases of this affection that have been published, the quadriceps was involved in 26; the brachial in 21; the iliopsoas in 3; biceps in 3; adductor longus in 3 and the triceps, gastrocnemius, gluteus, masseter and diaphragm in one each. It usually occurs when the muscles are at their prime and a traumatic factor was evident in many if not all of the cases.

104. Four Cases of Tumors in Psoas and Internal Iliac Muscles.—The lesions all simulated a tumor in the kidney or pelvis. Symptoms had been noticed for six to fifteen months before the operation. One patient was a woman of 47, who died two months after the fibroma had been removed from the iliacus; another a man of 37 with fatal recurrence of the spindle-celled sarcoma in three months after the intervention. A fibrosarcoma was removed from the third patient, a woman of 31, the tumor located in the psoas, and followed by rapid fatal recurrence. The fourth patient was a man of 26, and he recovered without mishap after removal of a myxofibroma in the psoas.

105. Radical Treatment of Tuberculosis of the Knee.—Mosetig restricts radical operation to persons under 50, although König has reported 50 per cent. cured in 100 elderly subjects treated by resection. The general condition is also an important factor in the ultimate outcome. During the last ten years Mosetig has done synovial arthrectomy in 7 and resection in 114 cases of tuberculosis of the knee, and six or seven-tenths of the total number were cured. All severer cases should be operated on at once, as the lesion is constantly spreading and the danger of general infection increasing. He operates under chloroform, resecting the parts involved, especially the bursa subcruralis, which is a favorite location for the morbid process. A thin curving slice is sawed off the head of the tibia, perpendicular to its long axis. If circumscribed foci are discovered on the sawn surface each is incised singly into sound tissue. After the cavity left has been disinfected with formalin and dried, it is filled with the bone filling, which Mosetig has previously described (see THE JOURNAL, page 1545 of the last volume). As the new bone forms and grows into the filling, it comes in contact in time with every particle of the iodoform. The halves of the patella are united with catgut passing entirely around it, and the soft parts sutured on each side of the patella, leaving a strip of rubber tissue at the bottom of the wound. The skin is then sutured with silk and the leg placed in a wooden splint, lined with cotton, covered with gauze. The splint is bound to the leg with gauze and an immobilizing bandage applied outside to include the entire limb. The leg is raised a little the first day. He has never had temperature in any case. The bandage is left undisturbed for three or four weeks, during which the patients remain in bed. The outside bandage is then removed and the patient allowed to go about on crutches. The limb can be used the seventh or eighth week, but a flannel bandage should be kept on a while longer and warm baths taken frequently. The patient leaves the hospital in two months. There is no limp when the sole is raised 2 cm. After a few weeks of careful use of the limb it can be used without fear in the hardest work. The harmlessness of the procedure is shown by the rapidity with which the patients completely recuperated, while the iodoform filling ensures smooth, rapid and permanent cure of the local lesion.

106. **Laparotomy and Ventral Hernia.**—By following Lennander's technic, an extramedian incision to avoid injury of motor nerves—the cause of atrophy in the muscles—and by leaving the fibers of the rectus intact between the cicatrix in the anterior aponeurosis and the peritoneum, Hirsch affirms that there can be no danger of ventral hernia later. He has watched the ultimate results in 41 cases thus operated on and found that Lennander's claims are justified.

107. **Osteomyelitis in the Side of the Sacrum.**—Gross has observed 6 cases and collected 10 in the literature in which the osteomyelitis was located in the lateral portions of the sacrum. In 10 the disease proved fatal. The osteomyelitis may be mild or severe, and much depends on proper surgical intervention, as he explains in detail. When a secondary abscess forms in the psoas it may be reached by resection of the sacro-iliac symphysis.

108. **Traumatic Paralysis After Fractures of Base of Skull.**—In Krähenmann's own 2 cases and in 3 he has found in the literature, there was trouble in swallowing, from unilateral paralysis of the palate musculature, and also disturbances in voice and speech from unilateral paralysis of the recurrent laryngeal. In 4 there was unilateral paralysis of the sternocleido and trapezius muscles, and in 2 unilateral loss of taste, in one instance only over rear part of one side of tongue. The injury to the nerves was located by these symptoms in the foramen lacerum posterius which transmits the three nerves involved. The sternocleido and trapezius muscles became paralyzed, but as other muscles compensated, there are no motor disturbances. Two of the 5 cases entirely recovered except for slight trouble in swallowing, still requiring care.

Mitteilungen a. d. Grenzgebieten der Med. u. Chir., Jena.

Last indexed XL, page 1617.

112 (XI, 3.) *Affection of Cauda Equina in Consequence of Tuberculosis of Adjoining Bones. M. Bartels.—Ueber Erkrankung der Cauda equina im Gefolge von Tuberculose der Symphysis sacroiliaca und der angrenzenden Beckenknochen.

113 *Can a Tumor in Spinal Cord Spontaneously Retrogress? S. E. Henschen.—Kann ein Rückenmarkstumor spontan zurückgehen?

114 *Die Exstirpation der Milz (spleen), ihre Indicationen und Resultate (an der Hand von 6 erfolgreichen Splenektomien). M. Jordan (Heidelberg).

115 Surgical Importance of Influenza. R. Milner (Hanover).—Zur chir. Bedeutung der Influenza: akute, chronisch recidivierende Spondylitis mit Schwielenbildung, Kompressionslähmung und Purpura nach Influenza.

116 *Blood Count in Appendicitis, etc. E. Stadler (Leipsic).—Zur diagn. Bedeutung der Leukocytenwerthe bei den von Blindarm und Wurmfortsatz ausgehenden entzündlichen Prozessen.

112. **Secondary Tuberculous Affections of Cauda Equina.**—Bartels reviews the clinical picture in 2 cases personally observed and one other. If the tuberculosis develops secondarily to a tuberculous affection in the sacroiliac symphysis and adjoining bones of the pelvis, the nervous symptoms from compression of the cauda equina usually locate the lesion without difficulty. He considers surgical intervention justified when the spinal vertebræ are not affected and the symptoms indicate compression by the upper portion of the sacrum. There is little to be gained from an operation if only the lower portion of the sacrum or the coccyx is involved.

113. **Probable Spontaneous Retrogression of a Tumor in Spinal Cord.**—Henschen's report of the recovery of a patient who exhibited symptoms of a tumor in the spinal cord which later apparently vanished, was reviewed in detail in THE JOURNAL when first published in the *Upsala Lakarefor. Forhandlinger*, vii, 8. The abstract will be found on page 1554 of vol. xxxix.

114. **Indications for Removal of Spleen.**—Jordan has become convinced that the spleen is an organ which can be easily spared; and that the removal of a movable spleen may be regarded as an almost entirely harmless intervention. The danger increases in proportion to the number and extent of the adhesions. The most favorable chances are when the affection is strictly localized to the spleen; if it is secondary to some constitutional affection, extirpation is dangerous. The statistics show that spleen affections are more frequent in women than in men. He has performed splenectomy six times with success and reviews 10 other cases he has found in the literature. He corroborates the existence of a chronic hyperplasia of the spleen which develops as a purely local lesion, affecting chiefly women between 20 and 30, and requiring years to develop, eight to fourteen years in the published cases. The spleen tumor is the only morbid process and the sole cause of the existing disturbances. The symptoms are those of crowding other organs or tissues. The spleen may grow to a weight of 2 to 6 pounds. The normal condition of the blood, liver and glands excludes a constitutional affection, and complete recovery follows the removal of the spleen, which is easily accomplished. Even the coexistence of cirrhosis of the liver is no contraindication in case of this primary, idiopathic hypertrophy of the spleen. Splenectomy has been done twice on account of primary tuberculosis of the organ, and in each instance a complete cure was effected. In case of a wandering spleen, if at all abnormal, ablation is indicated and also in case of doubt. The friability of the organ renders the results of splenopexy dubious, although theoretically indicated. Necrosis of the spleen with perisplenitic suppuration such as has been observed after trauma, and intrasplenic hematogenic abscesses indicate operation. The results have been remarkably favorable in such cases to date. The seven on record were all cured. Compensation soon develops after splenectomy, even in debilitated or pregnant subjects. Recovery was also complete in a case of primary malignant tumor of the spleen treated by splenectomy. In case of echinococcus and blood cysts, the organ should be removed unless bound down by adhesions. Extirpation should also be the rule in appropriate cases of malarial spleen hypertrophy.

116. **Leucocyte Count in Inflammatory Processes Originating in the Cecum and Appendix.**—Stadler has examined 70 cases and confirms the experience of others in regard to the value of the leucocyte count in differentiating simple fibrinous exudate from abscess formation. In the former there may be in the beginning a leucocytosis of 23,000, but it rapidly subsides. If the number of leucocytes remains continuously high or reaches or surpasses 25,000 later in the affection, an abscess may be assumed or retention of pus. In case of diffuse peritonitis the height of the figure is not so characteristic as its tendency to rise or fall.

Zeitschrift f. Heilkunde (Chiari's), Prague.

Last indexed page 142.

117 (XXIV, 2 and 5: Int. Med., 1-2.) Ueber autochthone Thrombose des Hirn-Sinus und der Vena magna Galeni. K. Walko (Prague). One case.

118 Ueber die bacterielle Diagnose des Typhus abdominalis nebst Bemerkungen über Anreicherungsversuchen mittelst der activen Beweglichkeit der T.-bacillen. C. Hayashikawa (Prague).
119 Influence of Mechanical and Thermic Measures on Blood Current and Vessel Tonus. F. Pick.—Einfluss mech. und therm. Einwirkungen auf den Blutstrom und Gefässtonus.
120 Cause of Peptone Formation in Leukemic Blood. F. Erben (Vienna).—Ueber die Ursache der Peptonbildung im leukämischen Blute.
121 Fall subacuter, spinocerebellarer Ataxie mit anatomischen Befund. J. Süsswein (Vienna).
122 [illegible] Menschen mit besonderer Berück- [illegible] J. Langer (Prague).
123 * [illegible] Digestion and Treatment of [illegible] —Einfluss der Fette auf die Magenverdauung und über die Behandlung der Hyperazidität.
124 Fall leukämieartiger [illegible] mit schwerer megaloblastischer Anämie [illegible] Exanthem. E. Hitschmann und H. [illegible]
125 (XXIV, 1 and 4: Path. Anat. 1-2.) Ueber einen sehr jungen, pathologischen, menschlichen Embryo. A. Fischel.
126 Changes in Spinal Cord After Loss of an Extremity. Q. Mathyas.—Zur Lehre von den Rückenmarksveranderungen nach Extremitätenverlust.
127 Unusual Collateral Circulation. H. Haberer (Graz).—Fall von seltenem Collateralkreislauf bei congenitaler Obliteration der Aorta und dessen Folgen.
128 Ueber ein Lymphangiom der Leber (of liver). R. Maresch (Vienna).
129 *Gummatous Affections of Female Urethra. G. Löwenbach (Vienna).—Die gummösen Erkrankungen der weiblichen Urethra.
130 Ueber Myeloschisis mit abnormer Darmausmündung (intestinal outlet). F. Lucksch.
131 Fall von Streptothrix-Pyämie beim Menschen. A. Horst (Vienna).
132 *Frequency of Arteriosclerosis in the Young. S. v. Sumnitzky (Prague).—Ueber die Häufigkeit von arteriosklerotischen Veränderungen in der Aorta jugendlicher Individuen.

123. **Influence of Fats on Hyperacidity.**—Walko has been studying the effect of olive oil on the stomach. He found that it not only retarded the secretion of hydrochloric acid, but also restricted within much narrower limits the proportion of free acid and total acidity in the further course of the digestive process. The results of a number of clinical tests are tabulated, which demonstrate that 50 c.c. is fully as effective as 200 in this respect. Another set of tables shows that the amount of fat-splitting ferment in the stomach is largest after ingestion of milk, smaller after meat and smallest after ingestion of carbohydrates. In another series of 8 clinical tests he found that the simultaneous ingestion of 50 c.c. of oil with other food does not disturb the proteolysis, and in case of hyperacidity, the digestion of albumin and of starch proceeds much more rapidly than without the oil. The favorable influence of oil and other easily-digested fats is felt not only in the stomach but in the small intestine and in the relief of constipation. On the basis of the result of these researches he has been applying olive oil extensively and systematically for the treatment of hyperacidity. He administers it in a tepid emulsion, through the stomach tube, increasing from 50 c.c. at first to 100 or 200. The patients sometimes preferred to drink the oil, and all gained from 4 to 10 pounds in four to six weeks. His experience includes 92 patients thus treated during the past two years. Some were cases of acute hyperacidity, others chronic, and all forms of secretion neuroses and acid hyperesthesia, chronic ulcer, chronic gastric catarrh and ulcer scars. He has also been much impressed with the value of bone marrow taken with the dinner. This contains 96 per cent. of fat and has a marked inhibiting action on the secretion of hydrochloric acid. He details experiments with atropin and sodium bicarbonate, which showed that the relief from either was only temporary, while the bicarbonate has a distinctly injurious action, more and more acid being secreted to neutralize the alkali. He found decided and permanent benefit from Carlsbad water or Carlsbad salts in case of hyperacidity in otherwise healthy persons, but it induced motor insufficiency in debilitated subjects. In case of ectasia with hyperacidity he always obtained excellent results from lavage of the stomach with a 1 or 2 per cent. saline solution, followed by pouring in of 100 or 200 c.c. of olive oil. He remarks that it is important to siphon out the last drops of the water introduced. He adds, in conclusion, that hyperacidity of the stomach is frequently benefited by a decided change in the diet, and that the subjective state of health is perhaps the best criterion, but the dietary should always include some easily-digested fats, such as milk fat, butter, bone marrow or an oil emulsion.

129. **Gummatous Affection of Female Urethra.**—Löwenbach has observed 28 cases of this comparatively rare affection. The lesions may resemble gummatous formations elsewhere, but are usually distinguished by a peculiar tendency to hyperplasia of the margins of the elephantiasic tumors and their cicatricial terminal products. They also display a marked tendency to recurrence at the same or adjacent points, and are rebellious to the usually effectual mercurial treatment. Persevering administration of iodid finally conquered the affection in a few instances. He illustrates some of the cases with colored plates.

132. **Arteriosclerosis in the Young.**—Sumnitzky was amazed to find lesions of unmistakable arteriosclerosis in 27.5 per cent. of 38 cadavers of individuals under 25, free from syphilitic infection. He suggests that the acute infectious diseases probably play a more important rôle in its production than heretofore recognized. In 18 of the cases there had been previous severe pneumonia, diphtheria, scarlet fever, measles, typhoid, smallpox or chronic tuberculosis. In one pronounced case of arteriosclerosis in a child of 2, there was a history of diphtheria, followed by measles and later fatal pneumonia. In 3 others there was hypertrophy of the heart, from scoliosis or a history of epilepsy.

Zeitschrift f. Klin. Medizin, Berlin.

Last indexed page 148.

133 (XLIX, 5-6.) Study of Diaphragm Breathing. de la Camp. [illegible] Pathologie der Zwerchfellathmung, [illegible] -rigen Herzbewegungen.
134 *Zu [illegible] der Blastomyceten beim Menschen. R. Bernstein.
135 *Fall von chron. allgem. idiopathischem Edem mit tödlichem Ausgang. R. Staehelin.
136 Relations of Iron in Blood to Iron in Urine, Blood Pigments and Red Corpuscles. A. Mayer.—Ueber das Verhältniss des Eisens im Blut, etc.
137 Metabolism During [illegible] and N. Suranyi
138 Action of Baths on [illegible] des indifferenter [illegible] Kohlensäurebäde [illegible] zur Messung der [illegible]

134. **Blastomycosis in Man.**—Bernstein describes a case of infectious disease with irregular fever in a little girl, two and one-half years old, fatal in less than two months. The autopsy revealed numerous foci resembling miliary tubercles, but no tubercle bacilli were found in them. Blastomycetes were found in the tissues and also at one time in the blood during life, but vanished from the blood later.

135. **Idiopathic Edema.**—No heart nor kidney lesions could be discovered in the case of chronic, idiopathic generalized edema described by Staehelin, and even at the autopsy no signs of an infection or intoxication could be detected.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE PRAXIS OF URINARY ANALYSIS. A Guide to the Chemical Analysis of Urine. With Directions for Preparing Artificial Pathologic Urines for Practicing the Various Tests, and an Appendix on the Analysis of Stomach Contents. By Dr. Lassar-Cohn, Professor in the University of Koenigsberg. Authorized Translation from the Author's Enlarged and Revised Second Edition. By H. W. F. Lorenz, A.M., Ph.D. (Berlin), Late Instructor of Organic Chemistry in the University of Pennsylvania. First Thousand. Cloth. Pp. 58. Price, $1.00. New York: John Wiley & Sons. London: Chapman & Hall. 1903.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES, Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. A New Edition, Completely Revised and Rewritten. Edited by Albert H. Buck, M.D., New York City. Volume VI. Illustrated by Chromo-lithographs and 763 Half-tone and Wood Engravings. Cloth. Pp. 1004. Price, $7.00 per Volume. New York: Wm. Wood & Co. 1903.

A TREATISE ON DISEASES OF THE RECTUM, ANUS AND SIGMOID FLEXURE. By Joseph M. Mathews, M.D., LL.D., President of the American Medical Association, 1898. With 6 Chromo-lithographs and Numerous Illustrations. Third Edition, Revised. Cloth. Pp. 589. Price, $5.00. New York: D. Appleton & Co. 1903.

MERCK'S 1901 MANUAL OF THE MATERIA MEDICA. A Ready-reference Pocketbook for the Practicing Physician and Surgeon. Compiled from the Most Recent Authoritative Sources. Flexible

Cloth. Pp. 282. Price, $1.00. Published by Merck & Co., New York and Chicago.

THE GEOGRAPHY OF DISEASE. By Frank G. Clemow, M.D. Edin., D.P.H. Camb., British Delegate to the Ottoman Board of Health. Cloth. Pp. 624. Price, $4.00. Cambridge: University Press. New York: The Macmillan Company. 1903.

REPORT ON WATER PURIFICATION INVESTIGATION AND ON PLANS PROPOSED FOR SEWERAGE AND WATERWORKS SYSTEMS. Jan. 1, 1903. Pasteboard. Pp. 266. New Orleans. A. W. Hyatt Stationery Mfg. Co., Ltd. 1903.

The Public Service.

Army Changes.

Movements of Officers of the Medical Department, U. S. A., under orders from the Adjutant-General's Office, Washington, D. C., for the week ending June 22, 1903:

Arthur, William H., major-surgeon, will repair to Washington, D. C., and report in person to the governor of the U. S. Soldiers' Home for duty as attending surgeon, to relieve Major Louis A. LaGarde, surgeon.

Bloombergh, Horace D., first lieut. and asst.-surgeon, now on leave of absence at Easton, Pa., will, on the expiration of said leave, proceed to San Francisco and report for transportation to the Philippine Islands, where he will report for assignment to duty.

Brechemin, Louis, major-surgeon, is relieved from further duty in the Division of the Philippines and will proceed to San Francisco, and report by telegraph to the adjutant-general of the Army for further orders.

Crosby, William D., major-surgeon, will proceed to San Francisco and report for transportation to the Philippine Islands, where he will report for assignment to duty.

Fisher, Henry C., captain and asst.-surgeon, is relieved from duty as attending surgeon and examiner of recruits at Baltimore, Md., and from further temporary duty at Fort McKinley, and will proceed to Camp George H. Thomas, Chickamauga Park, Ga., for duty, to relieve Major William D. Crosby, surgeon.

Lyster, Theodore C., first lieut. and asst.-surgeon, is relieved from duty at West Point, N. Y., and will proceed to New York City for temporary duty as attending surgeon and examiner of recruits, to relieve Major William H. Arthur, surgeon.

McCalum, Francis M., contract surgeon, now on leave, is relieved from further duty in the Department of the Lakes, and will proceed to Fort D. A. Russell for duty.

Price, Richard J., contract surgeon, is granted leave for three months on surgeon's certificate, to take effect about July 1.

Purviance, William E., captain and asst.-surgeon, will report to Major Louis A. LaGarde, surgeon, president of the examining board at the Army Medical Museum Building, Washington, D. C., for examination for promotion.

Pipes, Henry F., contract surgeon, now in Washington, D. C., will proceed to Governor's Island, N. Y., and report to the commanding general, Department of the East, for assignment to temporary duty.

Wells, George M., captain and asst.-surgeon, will report to Major Louis A. LaGarde, surgeon, president of the examining board, at the Army Medical Museum Building, Washington, D. C., for professional examination for promotion.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending July 4:

A. A. Surgeon J. T. Miller, detached from recruiting duty and ordered home to wait orders.

A. A. Surgeon R. B. Chapman, detached from recruiting duty and ordered home to wait orders.

Medical Inspector D. N. Bertolette, ordered to Washington, D. C., as member of the naval medical examining board.

Asst.-Surgeon J. A. Murphy, detached from the *Monadnock* and ordered to the *Celtic*.

Asst.-Surgeon R. K. McClanahan, detached from the *Oregon* and ordered to the *Villalobos*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 2, 1903:

Surgeon Preston H. Bailhache, leave of absence for seven days from July 1, 1903, under paragraph 189 of the Regulations.

Surgeon H. W. Sawtelle, granted leave of absence for two days from June 30.

Surgeon J. M. Gassaway, granted leave of absence for two days from June 28.

Surgeon G. W. Stoner, leave of absence for two days from June 29, 1903, under paragraph 189 of the Regulations.

Asst.-Surgeon M. J. White, to report to chairman of board of examiners, San Francisco, July 10, 1903, for examination to determine his fitness for promotion to the grade of passed assistant-surgeon.

Asst.-Surgeon L. D. Fricks, to report to chairman of board of examiners, Immigration Depot, New York, N. Y., July 6, 1903, for examination to determine his fitness for promotion to the grade of passed assistant-surgeon.

Asst.-Surgeon A. J. McLaughlin, relieved from duty at New York, N. Y., and directed to proceed to Washington, D. C., for duty in the Bureau.

A. A. Surgeon G. T. Simonson, granted leave of absence for one day.

A. A. Surgeon Jay Tuttle, granted leave of absence for thirty days from July 1.

Pharmacist S. W. Richardson, relieved from duty at St. Louis, Mo., and directed to proceed to Portland, Me., and report to medical officer in command for duty and assignment to quarters, relieving Pharmacist M. Walerius.

Pharmacist M. Walerius, on being relieved by Pharmacist S. W. Richardson, to proceed to St. Louis, Mo., and report to medical officer in command for duty and assignment to quarters.

BOARDS CONVENED.

Board convened to meet at Washington, D. C., July 3, 1903, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Assistant Surgeon-General L. L. Williams, chairman; Assistant Surgeon-General W. J. Pettus, recorder.

Board convened to meet at the Immigration Depot, New York, N. Y., July 6, 1903, for the examination of Asst.-Surgeon L. D. Fricks to determine his fitness for promotion to the grade of passed assistant-surgeon. Detail for the board: Surgeon G. W. Stoner, chairman; Surgeon C. T. Peckham; P. A. Surgeon T. Clark, recorder.

Board convened to meet at San Francisco, Cal., July 10, 1903, for the examination of Asst.-Surgeon M. J. White to determine his fitness for promotion to the grade of passed assistant-surgeon. Detail for the board: P. A. Surgeon W. G. Stimpson, chairman; P. A. Surgeon R. Blue; P. A. Surgeon H. S. Cumming, recorder.

DISMISSAL.

Asst.-Surgeon F. J. Thornbury dismissed, by direction of the President, from the Public Health and Marine-Hospital Service for conduct unbecoming a gentleman and an officer, insubordination, etc., to take effect on receipt of letter of dismissal (effective July 1, 1903).

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 3, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, June 20-27, 5 cases.

California: San Francisco, June 14-21, 2 cases.

Illinois: Belleville, June 22 29, 5 cases.

Indiana: Indianapolis, June 20-27, 1 case.

Louisiana: New Orleans, June 20-27, 4 cases, 1 death.

Massachusetts: Fall River, June 20-27, 3 cases; Taunton, June 20-27, 1 case.

Michigan: Detroit, June 20-27, 7 cases; Flint, June 20-27, 1 case; Grand Rapids, June 20-27, 3 cases; Port Huron, June 20-27, 10 cases.

New Hampshire: Manchester, June 20-27, 2 cases.

New Jersey: Bordentown, June 6-27, 24 cases, 5 deaths; Trenton, June 20-27, 1 case.

Ohio: Cincinnati, June 19 26, 3 cases, 2 deaths; Cleveland, June 20 27, 1 case; Toledo, June 13-20, 2 cases.

Pennsylvania: Altoona, June 20-27, 1 case; Johnstown, June 20-27, 1 case; Philadelphia, June 20-27, 26 cases, 4 deaths.

South Carolina: Charleston, June 20-27, 2 cases.

Wisconsin: Milwaukee, June 20-27, 2 cases.

SMALLPOX—INSULAR.

Philippines: Manila, May 2-9, 9 cases.

SMALLPOX—FOREIGN.

Austria-Hungary: Prague, June 6-13, 4 cases.

Belgium: Antwerp, June 6-13, 4 cases, 1 death; Brussels, June 6-13, 8 deaths.

Brazil: Rio de Janeiro, May 24-31, 1 death.

China: Hongkong, May 2-16, 12 cases, 1 death; Shanghai, May 9-16, 2 deaths.

Colombia: Bocas del Toro, June 9-16, 2 deaths.

Great Britain: Bristol, June 6-13, 1 case; Cardiff, May 2, 28 cases; Dublin, June 6-13, 15 cases, 1 death; Dundee, June 6-13, 2 cases; Leeds, June 13-20, 12 cases; Manchester, June 6-13, 9 cases, 1 death; [illegible] June 6 13, 1 case; Sheffield, May 30-June 6, 9 [illegible] ine 6-13, 1 death.

India: [illegible] 2, 44 deaths; Calcutta, May 23-30, 1 death; Karachi, May [illegible] cases; Madras, May 23-29, 1 case.

Japan: Kobe, May 23-June 6, 5 cases.

Mexico: City of Mexico, June 7-14, 18 cases, 12 deaths.

Russia: Moscow, May 30-June 6, 2 cases, 2 deaths; St. Petersburg, May 30-June 13, 41 cases, 10 deaths; Warsaw, May 16-24, 2 deaths.

Switzerland: Zurich, June 6-13, 1 case.

YELLOW FEVER.

Colombia: Panama, June 15-22. 3 cases, 1 death.

Costa Rica: Limon, June 11-18, 2 cases.

Ecuador: Guayaquil, May 2-23, 6 deaths.

Mexico: Merida, June 1-20, 5 deaths.

CHOLERA—INSULAR.

Philippines: Manila, May 2-9, 44 cases, 38 deaths; Provinces, May 2-9, 343 cases, 242 deaths.

CHOLERA—FOREIGN.

India: Calcutta, May 23-30, 52 deaths.

Straits Settlements: Singapore, May 2-9, 72 deaths.

PLAGUE—INSULAR.

Philippines: Manila, May 2-9, 6 cases, 2 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, May 24-31, 1 death.

China: Amoy, May 16, present; Canton, May 16, present; Hongkong, May 2-16, 215 cases, 184 deaths.

Egypt: May 23-30, 4 cases, 4 deaths.

Germany: Berlin, June 5-18, 2 cases, 1 death, contracted in [illegible] work.

[illegible] May 25-June 2, 186 deaths; Calcutta, May 23-30, [illegible] May 24-31, 105 cases, 100 deaths; Mauritius, [illegible] May 21-28, 1 death.

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Original Articles.

CLOSURE OF WOUNDS.*

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The methods of closing wounds now in vogue are not the best. This opinion is based on personal experience, observation of the work of others, inquiry and reading, and is the excuse I have for the presentation of this paper. I do not claim either priority or originality in the methods of wound closure advocated in this paper. My object in writing it is chiefly to urge a general adoption of the improved methods, and incidentally to show the desirability of a wider application of them than is made perhaps even by those who already use them.

For a considerable time I thought the method of closing wounds by tier sutures of absorbable material with a subcuticular suture for coapting the skin was the acme of perfection. Now, with rather rare exceptions, I never use a stitch in either the skin or subcutaneous tissue, but use adhesive plaster instead. The plaster is applied in strips about one-fourth of an inch in width, after the skin has been thoroughly dried. No more strips are used than are necessary to maintain perfect coaptation. If desired, they may be left on for two weeks. Some cases, as for instance operations for mammary carcinoma, will require either two or three tension sutures in connection with the adhesive strips, or instead the wound may be closed throughout with subcuticular stitches of catgut. Again, in rare cases a few stitches may be needed to obliterate dead spaces in very fat subjects. In these cases, however, it is usually possible to obliterate the dead spaces by placing strips of adhesive plaster over rolls of gauze placed parallel to the wound. I regard the use of adhesive strips in the closure of wounds as a long step in advance of the buried absorbable suture, which in its turn was a long step in advance of the older methods.

To-day, with the combined use of buried absorbable sutures and adhesive strips, results may be obtained which are far superior to those following the use of through-and-through sutures. Save in cases where much tension is necessary to maintain coaptation in the presence of infection, a suture through the skin is unnecessary, and will soon come to be considered as an evidence of want of skill or care on the part of he who places it.

Tension alone of the skin or subcutaneous tissues is not a sufficient excuse for placing a suture through the skin in a case where the avoidance of a scar is particularly desirable.

Superficial abscesses are less frequent with buried than with through-and-through stitches; they are least frequent when adhesive plaster is used and all stitches are avoided. There are three reasons why this is true: 1. There is better drainage when no stitches are placed. 2. The coaptation is more perfect. 3. Trauma is avoided. It may seem paradoxical to say that the drainage is better with the method which gives the most perfect coaptation. Nevertheless this is true. The blood which collects beneath the skin easily presses apart the elastic skin edges between the plaster strips and is immediately taken up by the gauze, and as soon as the oozing stops the skin again falls into apposition. I frequently remarked that the dressing over wounds closed with adhesive strips, other things being equal, was much more blood-stained than the dressings over wounds closed by suture. Perfect coaptation is, then, not incompatible with drainage. Indeed, the principal objection to the subcuticular stitch is that by its use the wound is closed too tightly. When suppuration does occur in wounds coapted by adhesive plaster it is of much shorter duration and less extensive than when stitches are used. By the use of adhesive plaster the scar is reduced to the minimum.

Another advantage of the adhesive plaster is that its use takes so much less time than does the placing of sutures by any method. The objection may be urged that there is danger of the plaster not being aseptic. There need be no fear on this score, however, as the plaster may be kept ready for use in an air-tight receptacle in the presence of formalin, which will thoroughly asepticize it without in the least diminishing its adhesive properties. I have used many of the rubber plasters in the market, and save that some adhere a little more strongly and promptly than others, I have found no difference in them. Plasters with much resin in them may irritate the skin.[1]

In operations about the face the avoidance of scars is particularly desirable. How common is it, for instance, to see the face of a patient who has been operated on for hare-lip terribly disfigured by scars caused by the stitches or pins used for purposes of coaptation. The cases of hare-lip requiring the placing of a stitch which shows are exceedingly rare. Subcuticular sutures with adhesive plaster is all that is required, and the results obtained will be found to be infinitely more satisfactory. Stitch-abscesses are a menace to life in a very slight degree only, but in however so little they increase the danger of operation this were a sufficient reason for doing all in our power to avoid them. In many cases the strongest reason for preventing suppuration of this kind is because it decreases the strength of the wound. For a through-and-through skin stitch, or a subcuticular stitch to be the cause of suppuration extending to the deeper structures is not an extremely rare thing. Generally speaking, animal sutures, with our present knowledge of preparing them, are not, as a rule, to be used in the presence of infection. This necessitates the use of non-absorbable sutures which can be removed when they have fulfilled their purpose. Such a necessity sometimes arises in operations for hernia. It can be met by placing the sutures mattress-fashion, and bringing the ends out through the skin and fastening them there by using perforated shot and buttons.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

[1] Folding both ends of each strip of plaster so as to produce a hem, as it were, free from adhesion, will materially facilitate the removal of the strips. I am indebted to Dr. H. A. Duemling of Fort Wayne for this suggestion.

This method reduces the number of skin punctures to a minimum, and does away with the dangers incident to the constriction produced by tying the sutures in the ordinary way. Another plan which has been found to work well is the use of a running stitch of non-absorbable material, each end of the thread being fastened by the shot and button. The objections to this later form of suture are two: 1. Its removal is painful. 2. If suppuration does occur it will be more extensive, other things being equal, than with an interrupted suture. When either of these methods are used for the deep structures the superficial ones are coapted by the adhesive plaster. Still another plan which I have found to work well where for any reason non-absorbable material was deemed necessary for the deeper tissues is to place the stitches as though the usual figure-of-eight stitch were to be used, but instead of completing the figure by tying, and thus coapt the skin, each end of the thread is fastened by the shot and button at a short distance from the margin of the wound. The skin is then brought together with adhesive strips. No matter how fat the subject, the proper placing of this stitch will not only result in effectually coapting the deep structures, but will also prevent the formation of a dead space between the deep structures and the skin, and with a minimum of constriction and trauma, both of which are particularly to be avoided in fatty tissue.

Save in intestinal work, I believe that non-absorbable material should not be used for suture with a view of allowing it to remain permanently. Personally, I have not for five years seen a case in which I thought such use necessary or advisable. Within this time I have operated on several large scrotal and umbilical hernias. I said in an earlier part of this paper that animal sutures were usually contraindicated by the presence of infection. This, I think, is correct, and yet I have used them under these circumstances, with the most gratifying results. In a case in which a large part of the half of the lower jaw was resected together with a portion of the cheek for an infected carcinoma I closed the wound throughout, except for one silkworm-gut stitch next to the drainage tube, with subcuticular catgut stitches and adhesive plaster, with the result that the scar was reduced to a line in width, save at the exit of the tube and the location of the through-and-through stitch. The necessity for drainage for other than infectious fluids is not a bar to the use of animal sutures.

In the presence of infection necessitating drainage there is especial reason for avoiding sutures particularly to coapt the skin or subcutaneous tissue. In such cases only such sutures should be used as are absolutely necessary to coapt the deeper structures, and the superficial ones should be coapted by the use of adhesive strips. Even these deeper sutures can be avoided in many cases wherein they are now, by the majority of operators, deemed necessary. To illustrate, an amputation of the arm seldom, if ever, requires a suture, and, as indicated above, they are especially to be avoided in such operations done through infected tissues. Court plaster, collodion and cotton and collodion alone are inferior to aseptic adhesive plaster. The reasons for this opinion, it seems to me, are too patent to require their being given.

CONCLUSIONS.

In conclusion, I desire to emphasize the following points:

1. The use of sutures should be avoided save where necessity demands their use. Many wounds, in which sutures are now commonly used, may be coapted more perfectly, more speedily and more safely without the use of sutures.

2. Tension and moisture are the only conditions making sutures necessary.

3. When sutures are necessary buried absorbable sutures should be used in all cases where there is no infection.

4. The necessity for drainage does not contraindicate the use of adhesive plaster for purposes of coaptation.

5. It is doubtful if the use of non-absorbable suture material should ever be used with a view to its remaining permanently.

6. Non-absorbable sutures are not necessary nor advisable save in intestinal work and in the presence of sepsis.

7. In those cases in which non-absorbable sutures are necessary that method of applying them should be chosen which will subject the tissues to the least possible trauma, produce the fewest possible avenues for infection through the skin, and permit of their being removed when they have fulfilled their mission.

207 W. Wayne Street.

DISCUSSION.

Dr. John E. Summers, Jr., Omaha—When I commenced the practice of medicine more than twenty years ago I used plaster in the open treatment of wounds. With our modern methods of the treatment of wounds we discarded plaster, and we discarded a very useful material, but probably it was a good thing, because it taught us to be more cleanly; but as plaster is made to-day there is no doubt that it can be used, and there is no question that thoroughly clean work can be done with it. The technic which Dr. Porter brings to our attention seems to me to be ideal. For the repair of wounds we have two or three things to consider: we must have accurate hemostasis; we must have exact coaptation of the edges, and from the bottom to the top the wound must be held together without tension. If this can be accomplished, we have done all that is necessary, and the very best things that can be done.

This can be accomplished in the superficial wounds always, but in the deep wounds I doubt whether it can be done, and as the Doctor has suggested, it may sometimes be advisable to use some kind of a stitch as an aid to the result desired. I would hesitate very much to rely entirely on plaster strips for the coaptation of abdminal wounds, except in selected cases where a normal convalescence was assured. Now in an abdominal operation of any seriousness there is a certain amount of shock, with moist skin, and after the wound has been dressed the adhesive plaster may loosen and not keep the edges together. For this reason I hold that it is unwise to use plaster in wounds of that kind. However, when we do use adhesive plaster, I think you should have a pretty definite idea of how it should be applied, and judging from the Doctor's drawing, he does apply it as I think it should be. Both ends of the plaster strips should be applied at reasonably fixed points.

Below they should go over the crest of the ilium, and they should cross over the inner border of the latissimus dorsi muscle. Then you have two points as nearly fixed as they can be gotten. If it is applied in this manner, then you can be sure if distension occurs that the plaster will hold.

DR. HERMAN E. PEARSE, Kansas City, Mo.—The tendency of us all is to do too much suturing about wounds, too little of which is really effective. We must recognize the fact that one of the most prominent steps in surgery was taken when suture material was perfected. It seems to me that the plan that the Doctor advises of the surface approximation of wounds, and if necessary the absorbable suture below the surface is a most excellent one. It has never seemed to me safe surgery to depend entirely for the closure of abdominal wounds on absorbable sutures. It may be that one or two unfortunate instances have made me more cautious in this regard. I remember particularly one old lady, quite advanced in years, where healing was particularly slow, in which the absorbable suture was used, and through some defect in the suturing or suture material the wound gave away on the fourth day, and I was chagrined to see three or four coils of intestines roll out. These were returned, and a through-and-through suture applied, and the patient made an uneventful recovery without hernia, and yet I suspect that many a case has this accident beneath the skin. If the damage was done in the first few days, it might never be suspected by the surgeon, and there would perhaps be a sufficient union for the surface to heal, and leave the inner layers of the abdominal wall separated. It seems to me that this method is better than suturing for wounds on the extremities and about the face. I think that the through-and-through suture of silkworm-gut should be used in abdominal surgery in addition to the superficial suture. At least one should use a few such "splinting" silkworm-gut sutures in connection with the adhesive strapping and the absorbable sutures.

DR. ANDREW W. MORTON, San Francisco—I have been very much interested for a considerable number of years in the use of adhesive plaster for the closure of wounds, and I do not think we should let this speaker go on record without a challenge. In the first place the Doctor speaks of closing wounds in the abdominal cavity by means of adhesive plaster, without using any suture to close the fascia. We all know very well from our experience in abdominal surgery that the principal thing that gives strength to the abdominal wall is the fascia, and if it is not brought together by means of stitches, how can it be brought together? The adhesive plaster simply pulls the outer structures together, and the fascia, which gives strength to the abdominal wall simply disappears by retraction. You can simply make coaptation of the skin by means of the adhesive plaster, but not of the deep structures, and if there is one thing that we are taught in surgery, it is not to leave any dead spaces. You take any deep wound and it is practically impossible to prevent dead spaces occurring by means of the adhesive plaster. I speak on this subject because I find that there is one thing that we are prone to do with any new subject, and that is to go to the extreme. Now, in closing superficial wounds, we have long since learned that it is an admirable method, because, in that condition we generally have a very low vitality of the structures, and on account of the amount of pressure which is necessarily brought to bear in closing these wounds by a stitch, which produces tissue necrosis—always an unfavorable condition. Another thing in regard to the use of the stitch, and the principal reason why the stitch is so often objectionable is on account of infection. In my opinion there are only two reasons for getting infection: First, not being aseptic, and second, surgeons all over this country in tying a stitch, put too much strength on it, and as a result they get tissue necrosis, which invites infection. To-day there is not the objection to the use of buried catgut sutures that there was a few years ago. I can see no objection to the use of the adhesive material, if you use the absorbable catgut suture, or chromatized catgut, to close the deep wounds. There is only one form of adhesive plaster with which I have had a large experience, and that is the form prepared by oxid of zinc. The first I used was the other, and I found that eight or ten days after the operation there was great danger of excoriation of the skin, which is naturally painful and dangerous. This excellent paper brings our attention to one of the prominent things in surgery, but I believe that the Doctor is using it in cases where it is hardly justifiable.

DR. WILLIAM M. PERKINS, New Orleans—In many wounds perfect union may be prevented by maceration of the tissues or by slight hemorrhages either subcutaneous or appearing between the stitches. Sutures have a distinct hemostatic function which can not be satisfactorily performed by adhesive strips. The perspiration, when confined by an impermeable covering, may cause sufficient maceration to greatly favor superficial infection. Germs like heat and moisture. Asepsis is a relative term; practically no wounds are germ-free, but we aim to limit the numbers of pathogenic micro-organisms and to secure conditions unfavorable to their development. It is often advantageous, especially in warm climates, to afford free ventilation to the gases under a dressing. Adhesive plaster prevents this to some extent. The whole theory of the use of *absorbent* gauze and cotton is based on the necessity for having a dressing which will keep wounds free from moisture and allow for the circulation of gases. Adhesive plaster strips are an excellent means of closing many wounds, but are by no means universally applicable.

DR. MILES F. PORTER, Fort Wayne, Ind.—I can not consider it possible that my paper was misunderstood by very many, as it seems to have been by this gentleman. I stated that you could not use adhesive plaster where there is tension, and there is tension where you coapt a hernia wound. I have used the adhesive plaster for the purpose of coapting wounds that could be coapted by it, and not for the purpose of deceiving myself. I stated that wherever there is tension, it must not be used. The method I ordinarily employ in abdominal wounds is to use the tier sutures of absorbable catgut, sterilized, for the deep structures and plaster for the skin. I have never had occasion to be sorry for it, although in some cases I have had occasion to be sorry that I made the operation, as in such cases as those related by Dr. Summers. Vomiting with opening of the wound, however, will occur when non-absorbable sutures are used as often as when absorbable sutures are used. I agree with Dr. Summers that it is advisable sometimes to employ stitches of nonabsorbable material. In regard to the moisture that you have when you coapt the skin with adhesive plaster, I do not know how it would be in this climate, but I have closed over one hundred wounds in this manner without trouble from this source. Beneath the plaster, of course, there is a small amount of moisture which comes from the follicles.

When you come to remove these little strips of plaster, oftentimes it is hard to pick up the end, but if you will just take the strip and turn in a quarter of an inch on each end before applying it to the wound, then you can take hold of each end very easily. Now regarding the treatment of abdominal wounds. I use short strips of adhesive plaster, three inches in length and one quarter inch wide, to coapt the skin, and over the dressing I place long, wide strips of adhesive plaster that reach three-quarters of the way around the body. My strips of adhesive plaster are put on solely with a view of keeping the skin and subcutaneous fat coapted, and you can not keep anything else coapted in that manner. If the man who has made many operations on the face using through-and-through sutures will try the subcuticular stitch with adhesive plaster, I warrant you he will never go back to the old method.

For Prickly Heat.—*Clinical Medicine* suggests, since prickly heat is caused by the irritation from perspiration which can not readily evaporate, that it will be found better to resort to soap and water, used frequently, and to avoid alcoholic and alkaline washes. Once a day, perhaps, the irritated parts should be gently bathed, then dried thoroughly, and afterward anointed with cocoanut oil, which is absorbed readily, and should be applied with the hand. It is not greasy, and will not soil the clothing unless an excessive quantity is used.

A CASE OF ACUTE, NON-TRAUMATIC, MULTIPLE OSTEO-MYELITIS,

PRODUCED BY THE STREPTOCOCCUS, OCCURRING IN A MALE ADULT.*

JOHN T. BOTTOMLEY, M.D.
BOSTON.

NARRATION OF CASE.

A. H. C., 43 years old, a theatrical manager, was born in France, lived most of his life in England, and had been five years in this country. His family history was negative. His previous history up to 1892 was not noteworthy. Though he had led an irregular life, with much excitement, travel and exposure, he had always been strong and robust. Venereal infection was denied; a moderate use of alcohol admitted. About 20 years ago he broke his left tibia at the junction of the lower and middle thirds, but it had given him no bother since.

Ten years ago he had an attack of "left-sided pleurisy" which lasted about six weeks. Though he soon recovered his normal weight and strength, he has since then had more or less pain in his left chest, a harassing cough, an almost constant bloody expectoration and the lower lobe of his left lung has been flat to percussion. These symptoms have always been exaggerated after prolonged physical exertion or mental worry. Occasionally, but only for a period of a few weeks at most, he would be free from them. Such a period occurred last spring, but the symptoms, returning in June, continued till his death. Several specialists, both here and abroad, had examined him, but a definite diagnosis had never been made. The uniformly bloody, prune-juice expectoration had been carefully examined again and again for tubercle bacilli, streptothrix, actinomyces and for neoplastic elements, but always with negative results. He had undergone, as a diagnostic measure, most thorough anti-syphilitic treatment without relief or change in his condition. His symptoms, subjective and objective, continued the same year after year. Repeated punctures at different times showed only a thickened pleura. No fluid, purulent or otherwise, was ever obtained, nor was a cavity in his lung ever demonstrated. A distinguished New York specialist who saw him a number of years ago had an opportunity of re-examining him last fall and found the physical signs unchanged, which rendered very improbable the diagnosis of a slow-growing malignant tumor of the lung which had once been advanced.

Aug. 1, 1902, while making a railroad journey, very sudden and severe pain began both in his left arm just below the shoulder and in his left leg about the middle. Though he had considerable fever (103), the severe pain was his only subjective symptom for several days; then he had a chill, a diarrhea started in and he began to feel "sick all over." A physician was called who reports that at that time (six days after the acute onset) there was "a swelling with deep pain on pressure over the inner surface of his left upper arm, at the junction of the middle and upper thirds. There was also deep induration over the outer aspect of the middle third of the left leg. Both arm and leg were swollen and the swellings were so tender that a thorough examination was impossible. There was no glandular involvements. The urine was negative; there was no temperature." Anti-rheumatics internally with local cooling lotions seemed to afford some relief for a day or two, but the pain then became more intense and the patient started a run of fever which varied between 100 and 102, but followed no definite type. Sweating now began, slight at first, but gradually increasing till it became a feature of his illness. A white count, made about the sixteenth day, showed a leucocytosis of 17,000. The patient became more and more ill; the temperature assumed a higher level and fluctuation finally appeared in the swellings on the arm and leg. A surgeon who saw the case in consultation at this stage opened the abscesses under local anesthesia, the patient's critical condition contraindicating a general anesthetic. The humerus and fibula were found to be partially denuded of periosteum, but "no connection with the bone marrow could be established." During the following month several operations were done on the left arm and leg to secure proper drainage. The symptoms, however, continued and the patient's condition grew gradually worse. His temperature varied from 101 to 103, while his pulse was about 125. A month after the onset of the disease his right forearm and right leg began to swell and to become tender and painful. An abscess over the upper part of the ulna was opened and drained; bare bone was once more found. The leg was not opened. The pus from all the abscesses showed the streptococcus in pure culture and the same organism was found in the expectoration. About the sixth week of his illness the state of the left arm became so bad that amputation was advised, but it was not done, partly because of the patient's unwillingness and partly because of his condition, which by this time had become so critical that even simple incision of an abscess under local anesthesia threw him into marked shock. For the latter reason a sequestrum which had formed in the left humerus was not removed. Numerous punctures into the flat area of the chest were made, but no pus was found. Yet a specialist in chest diseases who saw the patient in the sixth week of his illness diagnosed the chest condition as a pulmonary abscess.

Oct. 17, 1902, in the eleventh week of his illness, the patient came under my personal observation. He was emaciated and evidently septic. His temperature was running about 101.5, his pulse about 120. His respirations were only slightly accelerated. His chief subjective symptoms were his cough, severe pain in the left arm and right leg and moderate pain in his left leg and right forearm. His urine showed a slight trace of albumin, but was not particularly abnormal. He had an intermittent diarrhea which annoyed and weakened him greatly.

The whole left upper arm was swollen, thickened and edematous. On all its aspects were the wounds of his previous operations, some partially healed, some wholly open. From all came a free, foul-smelling, thick, purulent discharge; through all the examining finger could feel bare, roughened bone. The shoulder joint was involved in the process. The left forearm and hand were also swollen, but only as a result of the impeded return circulation.

On the external aspect of the left leg in its upper third was a partially healed wound about four inches in length. A sinus at its center led down to the fibula denuded of its periosteum over a considerable area. The discharge was not profuse. The upper half of the leg was only moderately swollen.

There was some general swelling of the whole right leg, but it was more noticeable over the lower half, especially just above the ankle joint, where there was marked edema and the tenderness was exquisite. The skin over this area was not reddened.

The right forearm was swollen from elbow to wrist, mostly posteriorly and on the ulnar side. Over the upper posterior surface of the ulna was a wound two inches long which, like the others, led down to bare bone and gave exit to a profuse discharge of thick pus. The elbow joint was apparently uninvolved, but was fixed at an angle of 45 as a result of its being held in that position for some weeks.

The rest of the story can be briefly told. At the first visit simple incisions were made in the right leg to relieve the tension and let out the pus. The previous incisions on the other members were lengthened to provide more effectual drainage. These procedures afforded so little relief that, after consultation with Dr. John C. Munro, radical measures were decided on, notwithstanding the critical condition of the patient. In two operations, one following ten days after the other, under general anesthesia, a very foul sequestrum six inches long was removed from the left humerus (the well-marked involucrum adding much to the difficulty of the operation), one about four inches long from the left fibula and another about two inches long from the right ulna; the right leg was freely opened and large areas of bare bone found on both tibia and fibula; the tibia was trephined and, pus having been found in the medullary cavity, a gutter was made with a chisel down the whole front of the cortex. The medullary cavity of the right fibula was opened with rongeur forceps and drained. It was not so extensively involved as the tibia. The right ulna was treated likewise and free drainage provided.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

Necrosis of bone was very extensive in the left humerus and right tibia. There was a large quantity of foul, thick pus in the soft parts of the lower right leg. The periosteum was but little thickened over the upper half of the tibia, but was retracted from a large portion of the cortex of the lower half.

These operations brought the temperature down to normal for the first time in the course of the disease and there it remained till the end, save when backing up of the pus on two occasions caused a temporary rise to 101. The pulse also fell to the neighborhood of 100 and for two weeks following the operations the patient was very comfortable and spent part of each day in a wheelchair. But, unfortunately, recurrent attacks of diarrhea, the several operations necessary to maintain proper drainage, with possible advancing amyloid disease of his internal organs, so weakened him that he died early in January, 1903, on the one hundred and fifty-fifth day of his illness. Without doubt he had septicemia. An autopsy could not be obtained.

His fever was at its highest during the third and fourth weeks, touching 104.8 on the twenty-ninth day. It touched normal for the first time on the ninety-seventh day. The average temperature was about 101.5; the average pulse about 115; the highest rate reached was 140, coincident with the highest point of temperature. Except for a period of two weeks following the free opening of the bones, the patient was very restless and nervous, particularly at night. On and off a severe diarrhea gave him much trouble and was most difficult to control. He took very large quantities of nourishment throughout his whole illness and had very little gastric disturbance. Profuse sweats were common; chills were absent. During the course of his illness he developed a marked pilosis —a condition not uncommon in these cases. His cough was very troublesome and the expectoration always blood-stained, sometimes with dark, but more often with bright blood.

The immediate cause of his death was cardiac failure, of which he had several attacks during the last two weeks of his illness.

COMMENTS ON THE CASE.

With regard to the diagnosis in the case there is but little to say. The long-standing affection of his lung, whatever may have been its nature, afforded to the streptococcus a focus of development in the body, a point of entrance to the circulation and a consequent opportunity to produce the unusual condition already described.

After the paper of Lexer[1] and that of Nichols, presented at the present meeting, there is at present nothing to be added to the bacteriology and pathology of osteomyelitis. This clinical contribution to the subject has reason for its being in these three factors: (*a*) the case showed multiple foci; (*b*) it occurred in an adult 43 years old, and (*c*) the infecting organism was the streptococcus.

Acute multiple osteo-myelitis, while not a very rare disease, is still by no means common. Funke[2] reported to the Surgical Congress in 1895 644 cases of osteo-myelitis; of these only 37 were examples of the multiple type. Neumark[3] reports 30 cases, five of which were multiple; Volkmann and Roser[4] consider the multiple form rare, and Wenzel reports a single case in a girl of 13. Haaga[5] says that one-fifth of all the cases are multiple. But, apart from the question of the rarity of this form of the disease itself, the fact that the present case occurred in an adult far removes it from the ordinary run of osteo-myelitis cases. Only 56 of Funke's 644 cases were found in patients over 25 years old. Of the 37 cases with multiple foci, all—without exception—occurred in children. In fact, he says that the multiple form occurs only in children. Four cases mentioned by Volkmann[6] were all in patients under 14 years old.

In a fairly thorough search of literature I can find but one similar case of acute multiple osteo-myelitis occurring in an adult. H. F. Devel, in the proceedings of the Warsaw Society in December, 1885, reports the case of a soldier, 24 years old, who, in the course of a severe cold, developed osteo-myelitis foci in a rib and tibia synchronously; these were followed in the next three months by foci in six other bones. The infecting organism was not mentioned. Even this case comes on the border-line between youth and manhood.

Moreover, the case is noteworthy from the bacteriologic standpoint also. Lexer[1] in his exhaustive article (1896-1897) collected only 20 cases of osteo-myelitis in which the streptococcus was the infecting organism; 10 of these had been previously reported to the French Surgical Congress by Lannelongue.[7] Lexer remarks that the streptococcus, like the staphylococcus, shows a marked tendency to develop in the bones of the young. Lannelongue's cases varied in age from 10 days to 13 years. Of Lexer's 10 cases 8 were under 14 years of age.

In the examination of the pus from 73 cases of osteomyelitis Lannelongue and Achard[8] found the streptococcus alone only 7 times.

Lexer has demonstrated that the clinical course of cases of streptococcus osteo-myelitis may not be unlike that of a staphylococcus infection. He divided streptococcus infections into three groups, in the first of which —containing those cases in which phlegmon was very marked in the affected bone and sequestration was found —the present case falls. Clinically it does not differ in any important item from the cases caused by the staphylococcus. Before Lexer wrote his paper Lannelongue had recognized a difference both clinically and anatomically between the streptococcus and the staphylococcus infections, and the symptomatology of the present case illustrates the fact (mentioned by Lannelongue) that both the fever and the pain in the streptococcus cases are apt to disappear on the third or fourth day. The improvement, however, is only temporary. Both symptoms return again.

It seems to be generally agreed that the pus in streptococcus cases is thinner and the necrosis of bone and soft parts less than in the cases of staphylococcus infection.

Klemm[9] says that a widespread phelgmon of the medulla is rare in streptococcus cases and that edema of the soft parts is of wide extent. Because a single case can not be maintained as the standard, the fact that the pus in the present case was thick and that the medulla was widely involved is of no particular importance. Besides, secondary infection was present at the time I first saw the case.

But let the clinical or the pathologic or the bacteriologic aspects and differences be as important as they may, the fact remains that the important and imperative thing, the factor that means most to us and to the patient, is an early diagnosis. An early operation must follow an early diagnosis. The old principle of "Where there is pus, open and drain" holds here. Pus is in the medullary cavity and it is the medullary cavity in the acute cases that must be opened and drained, that results may be achieved. Doing less than this is doing nothing. Temporizing, when a diagnosis has once been made, is criminal.

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DISCUSSION

ON THE PAPERS OF DRS. BOTTOMLEY AND NICHOLS.*

Dr. De Forest Willard, Philadelphia—It is not only the ordinary practitioner who is dilatory in diagnosis, but there are many surgeons who are slow in making up their minds and the golden opportunity is lost. Every case of osteomyelitis is infective, and we know that it needs as prompt attention as does a case of acute appendicitis. It should be recognized in the first forty-eight hours; it should be operated on in the first forty-eight hours. It should be operated on as soon as the diagnosis is made, whether it be of a streptococcus infection or a staphylococcus infection, and therein I would differ with Dr. Bottomley. In regard to the infection: I believe that the streptococcus infection is particularly serious, but in either case cutting inside the medullary cavity of the bone, freeing it from pressure and from infective elements is the only method which promises relief from total, or large destruction of tissue. The ordinary practitioner, and still less the surgeon, ought not to allow these cases to go on to destruction, suppuration and death. These cases are practically dying from sepsis when they come into our hands, and they have been treated for what? For that bane of progressive medicine, "rheumatism." If we could strike the term rheumatism out of the surgical world, it would be a blessing. One of the most potent destroyers of men, women and children is that cloak of ignorance, inattention and neglect, "rheumatism." How many cases we see dying day by day with an abscess containing ounces of pus, and the physician still treating it for rheumatism, or for typhoid fever. This is not an uncommon thing—every surgeon sees it over and over again. What is most needed is early, correct diagnosis. The treatment is plainly indicated. Where we have the evidences of rapid infection, with increasing pain, and deep-seated tenderness, there is only one rational treatment, that is to operate at once, relieve pressure and establish thorough drainage from the medullary cavity of the bone. The opening can not be made too quickly or too freely.

Dr. J. Clark Stewart, Minneapolis—I think it is most opportune that these papers should have been read to-day, because we have been hearing so much of the various forms of abdominal surgery, particularly that of ulcer of the stomach, gall-bladder disease and appendicitis, while it is rare to hear papers on osteomyelitis. I overheard a remark while in my seat, which I hope the gentleman who made it will pardon my repeating. When Dr. Nichols took the stage he said, "What, another paper on osteomyelitis; they must have a great deal of osteomyelitis in Boston," which reminded me of Dr. Oschner's story in regard to gall-bladder disease in Rochester, and I think that Dr. Nichols might answer very much in the same way that Dr. Mayo did: "We diagnose our cases of osteomyelitis in Boston." I think, without doubt, that osteomyelitis occurs in the practice of every man here, and possibly oftener than he recognizes, and there is no question that a very large percentage of the cases are primarily diagnosed erroneously. The diagnosis of these cases as rheumatism, which Dr. Willard mentioned, is probably the commonest error made, this being especially true of the subacute and chronic cases. Among the acute cases the diagnosis of typhoid is often made, and this error is a very serious one in causing delayed treatment. It has been my lot to see several cases treated in a general hospital as typhoid until the abscess presented at some external point, and this, of course, has not the excuse of the same diagnostic error earlier in the history of the case when severe sepsis may so mask the local symptoms as to make the resemblance to typhoid quite striking. The leucocytic count ought to clear up all these obscure cases, as there is regularly a decided leucocytosis in all acute cases of osteomyelitis. The early diagnosis of osteomyelitis is unquestionably the important point, and with the facilities at our command ought to be made in most cases without great difficulty. In the subacute and chronic cases the difficulty of diagnosis is very much greater, and frequently there is no diagnosis made until a bone lesion is discovered at the bottom of the superficial abscess cavity. Fortunately, in these forms early operation is not of so great importance as in the acute cases. In regard to Dr. Nichols' paper there were two or three points in which I was particularly interested. One was the instruction that in early operations you should cut in the medullary cavity and drain the bone without interfering with the marrow. This seems to me dangerous as a general rule, for while I have no doubt that in many cases operated on early, one is able to say whether or not marrow is infected, still judging from my own experience there are cases with multiple foci scattered through the marrow where it would be extremely difficult without removal of the marrow itself to determine the limit of the infection. In regard to Cushing's operation for the removal of the whole bone, it seems to me that this is unnecessarily severe and liable to misuse, for there are a great many cases of partial osteomyelitis in which a much less extensive operation will secure perfectly satisfactory results. In many cases you can remove the sequestrum, clean out the cavity and get primary union by organization of a blood clot, and in other cases by the slower method of packing, the final results are very satisfactory. Personally, I have had very little experience with the Cushing operation, and the results which he reports in cases of total necrosis are certainly very brilliant, but I doubt whether it should displace the other methods which have stood the trial of time.

Dr. Richard H. Gibbons, Scranton, Pa.—Those of us who have been taught by William T. Detmold, James R. Wood, Thomas M. Marco of New York, and D. Hayes Agnew, the Grosses and our distinguished ex-chairman and teacher, Dr. Willard, need not fail to make a diagnosis of osteomyelitis nowadays, or in much earlier times. When I first began practicing medicine, thirty years ago, Detmold taught that pain of a dull character in bone was due to one of two causes, either syphilis, or inflammation that would result in abscess. If syphilis, one will get pitting on pressure over the tibia, whether there is inflammation or not, or how extensive it may be, whereas you will get but slight pitting if due to non-syphilitic inflammation of bone. Long since, I have been applying to suspected bone the test which the dentist applies to the questionable tooth. As Dr. Murphy has said, you will not get pain by pressure, unless it is long-continued, but you will get pain by percussive pressure. However slight it may be, you will get painful response by this method, even in the first hour of the attack. The thing to do before opening up or trephining inflamed bone is to locate the seat of the infection, by gently tapping over its supposed site. I have had considerable experience in this kind of work in the anthracite coal regions of Pennsylvania, where many of the boys engaged in and about the mines become infected, and I have chiseled out bone throughout its length, and I have never had a bad effect, although I chiseled the bone all the way from the head of the tibia to the ankle joint. In one case I trephined and then guttered the entire bone, down into the maleolus. This was in an old man, and he recovered. These cases ought to all get well by operation, promptly performed, unless there is a tubercular infection in connection with the trouble.

Dr. J. B. Murphy, Chicago—I wish to congratulate the gentlemen on the practical points in the papers, and I wish to speak particularly on the second paper; I desire to still more forcibly emphasize the point of early diagnosis in acute infec-

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* Because of its length Dr. Nichol's paper will be published later.

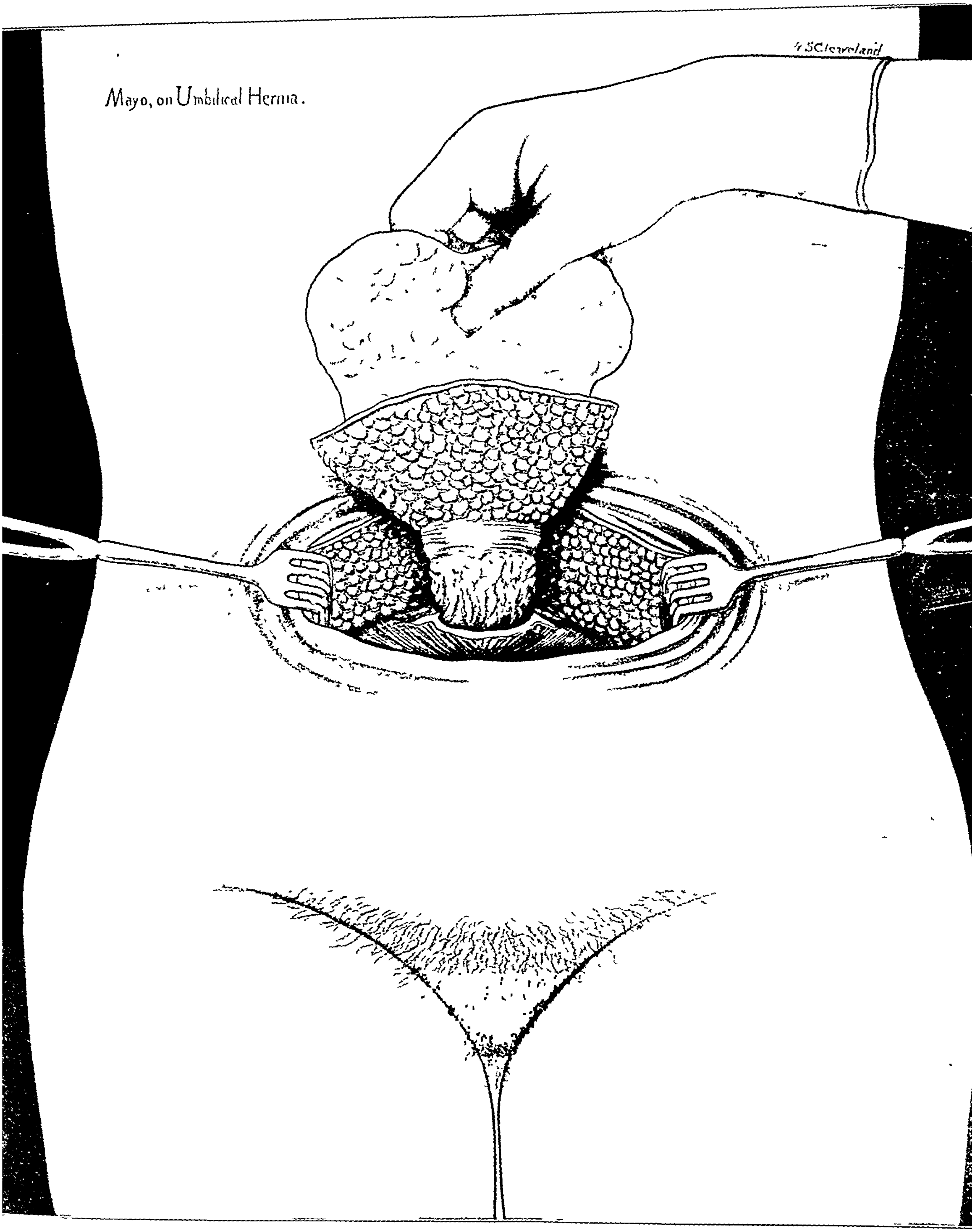

Figure 1

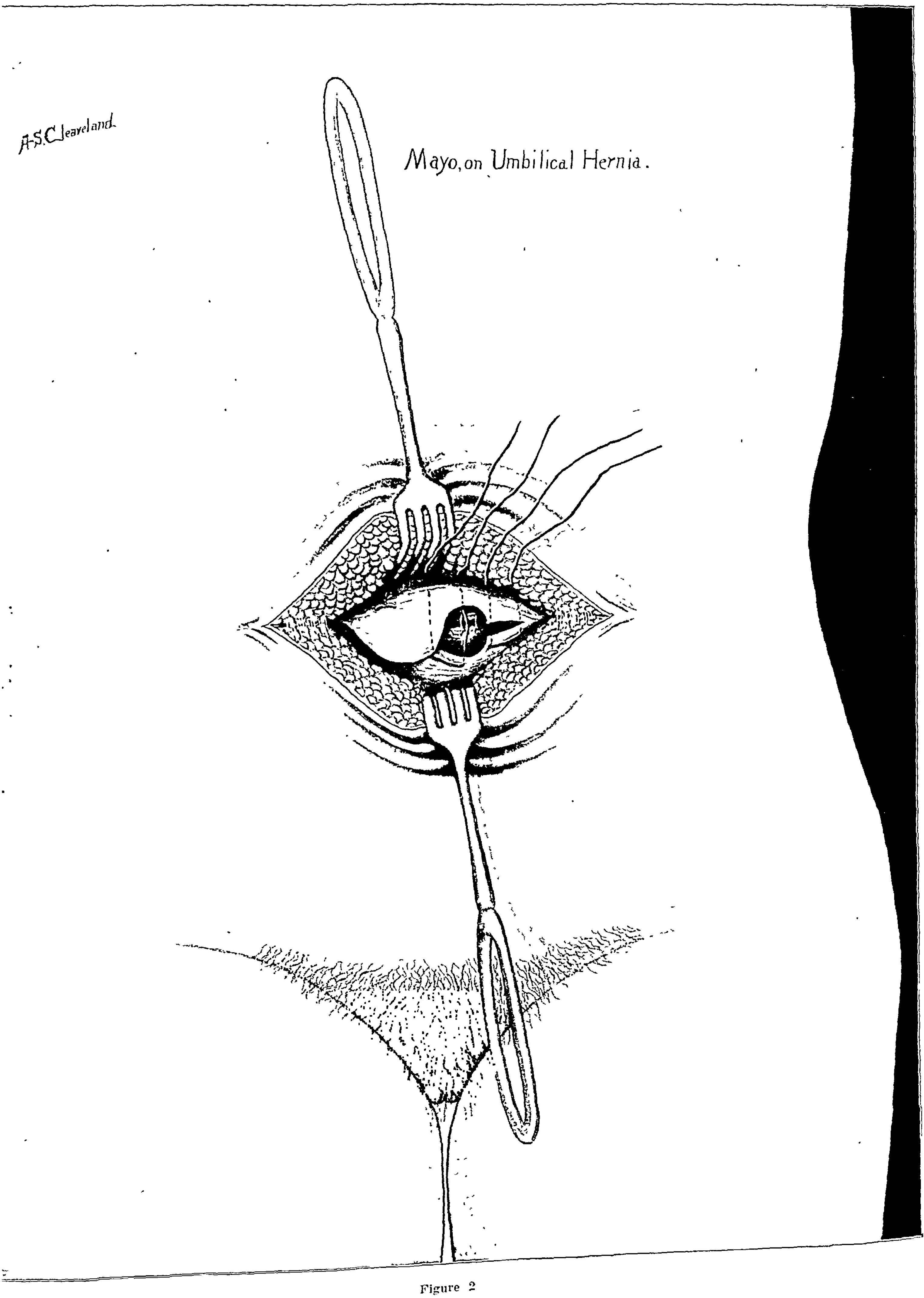

Figure 2

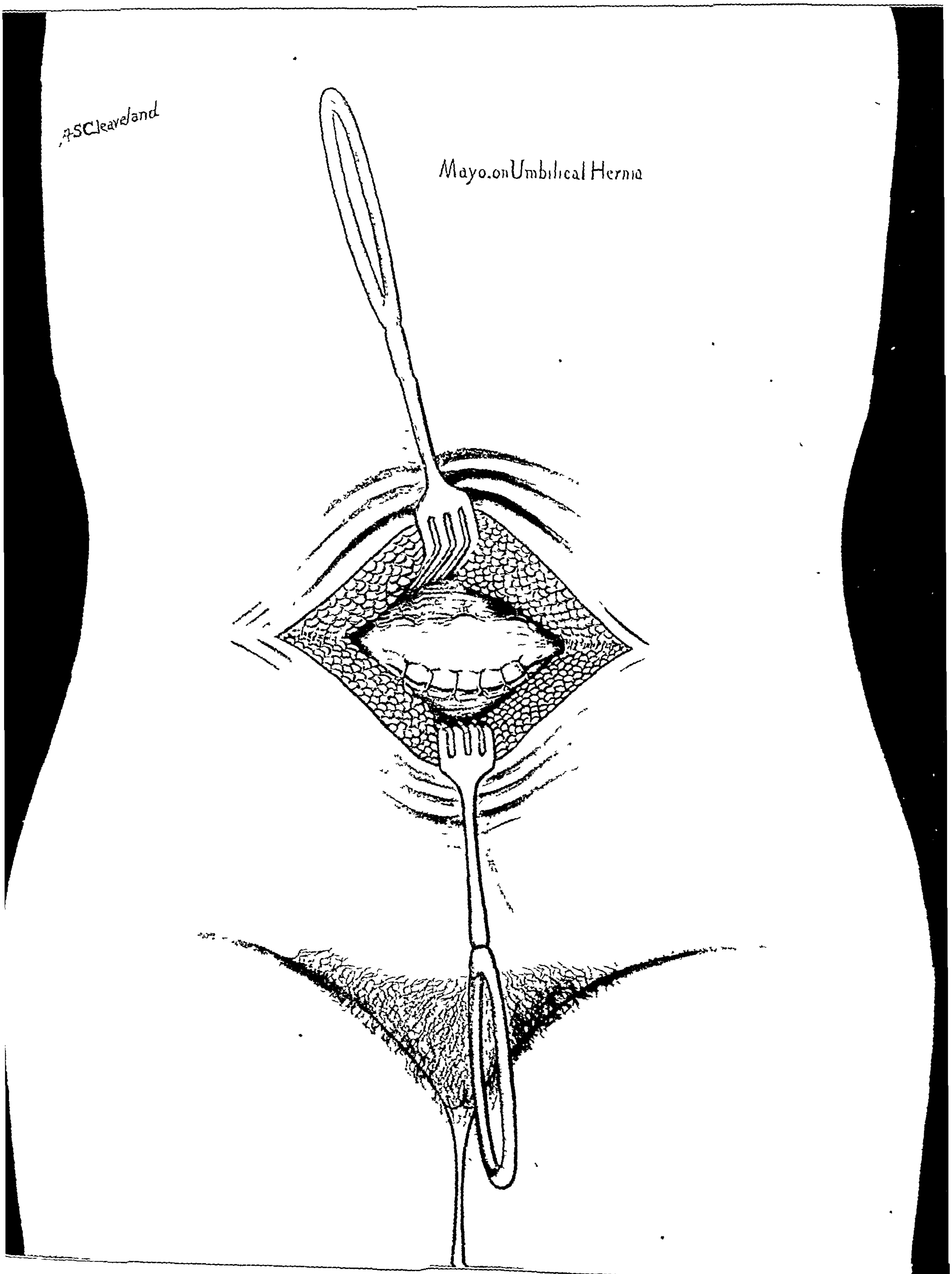

Figure 3

the osteomyelitis What do we mean by early diagnosis in acute infective osteomyelitis? In what way is the physician of importance to his patients in a case of acute osteomyelitis? He is of importance to his patient in only one way, and that is when he makes a diagnosis inside of the first forty eight hours He is only of value to the patient when the case is diagnosed and operated on inside of the first forty eight hours. Can it be done? Yes. The history of a case of osteomyelitis is so classic, so typical and so uniform that one can make the diagnosis ten hours after infection has occurred or ten years by interrogating an individual who was present at the time of the infection. What is the order of symptoms? The acute pain is usually preceded by a chill, followed by high temperature The pain occurs usually in the extremities of the long bones and in the majority of cases in children is not associated during the first forty-eight hours with effusion into the joint close to the focus of the disease, differing in this particular from rheumatism, which it is so uniformly erroneously diagnosed The pain and sepsis increase hourly, but there is no local sensitiveness. Now then, what takes place in the third twenty four hours after the infection? It is purely a symptomatic expression of pathology During this period there occurs septic intoxication, acute absorption, high temperature, delirium, and all that goes with it And with the advance of pathologic changes, with the increase of infectious products, with increasing pressure within the medulla of the bone from the bacterial invasion, we have destruction of the bone tissue, both by the toxic and biotic action of the infective flora, acting under great pressure. Rapid absorption continues until there is destruction of a vessel in one of the Haversian canals and the escape of the pus into the subperiosteal space In the early stages of a case of acute osteomyelitis, there are no signs of inflammation on superficial pressure over the bone I mean, during the first forty-eight hours, while the infective material is confined and restricted by the bony wall In the third day of the infection, we usually have an escape of the pus from the center to the subperiosteal space, and sensitiveness to superficial pressure. But there is a sign that is an important one from a practical standpoint in the early stages, deep and continued pressure elicits pain and frequently indicates the position of the infection, even while the infection is still entirely within the bony wall. This will aid in making the diagnosis of the location of the focus of the infection When the pus elevates the periosteum, there is rapid necrosis as the circulation is cut off from without and within In forty-eight hours one may have complete destruction of the entire shaft of the bone Therefore, if we are to be of service and beneficial to the patient, we must relieve that infection focus from the condition which is so dangerous in any tissue of the body, namely, infection under pressure, by making an incision down into the bone and allow the infective material to escaps and thus avoid necrosis. We have just as perfect a guide to the source of infection as we find in many other cases of infection. One should drill a hole through the bone into the seat of the infection and allow the pus to escape from the bone, and thus relieve the intoxication and avoid necrosis.

If the general surgeon will get that window in the bone inside of the first forty-eight hours, he will save the patient from destruction of the bone, from the possibility of involvement of the joint, from the danger of fatal sepsis, and put him in condition for the line of demarcation to form, so that he will have but one small sequestrum. Then the case goes on and gets well, and the dead bone is easily removed through this window, after the separation of the sequestrum, usualy in six weeks. Chills, high temperature, local aching and no sensitiveness in the first forty-eight hours, except on deep and continued pressure for one or two minutes, when the pain becomes excruciating, are very strongly in favor of acute osteomyelitis and demands as prompt surgical intervention as acute infectious peritonitis.

DR. EDWARD H. NICHOLS, Boston—One or two points brought out in the discussion deserve some mention.

As regards the question of diagnosis: during the past five years I have had an opportunity to see many of these cases during the acute stage, at the Boston City Hospital, both on my own service and on that of the other surgeons, who have kindly allowed me to see their cases, and I quite agree with all that Dr. Murphy says in regard to the desirability of early diagnosis, if we are to expect the best results. I do not agree, however, that the early diagnosis always is easily made. In some of the cases the typhoid symptoms come on so early that the patient is too stupid to notice the pain, and the cases may be treated as typhoid fever by excellent diagnosticians. In other cases the joint pain and swelling may be so extreme as to entirely obscure the bone affection, although monarticular pain, especially in children, always should arouse at least a suspicion of osteomyelitis.

In regard to the reparative power of the marrow: the integrity of the cortical bone is dependent on the integrity, both of the periosteum and of the endosteum. Extensive stripping of the periosteum usually produces considerable necrosis of the cortex; if the endosteum also is destroyed marked necrosis of the cortex is certain. Thence if one trephines into infected marrow and curettes out the remnant of undestroyed endosteum he destroys the membrane which, in some cases at least, might regenerate the infected marrow, and maintain the integrity of the inner layer of the cortex. No one would, of course, remove the periosteum because he found an abscess between it and the shaft, and the same thing applies to the removal of the endosteum.

In regard to the removal of the necrotic shaft. It is not always necessary to remove the entire diaphysis. It may be sufficient to remove one half, or whatever portion of the diaphysis is necrotic. The removal of the entire diameter of the necrotic shaft is, however, much preferable to removing merely a shell of apparently necrotic cortex. When a mere shell of cortex only is removed it will be found, if the cases are followed for a number of years, that recurrences take place in a large majority of cases, and permanent cures are not common. The cases where removal of a superficial shell gives a permanent cure are usually cases of periostitis with little involvement of the marrow.

FURTHER EXPERIENCE WITH THE VERTICAL OVERLAPPING OPERATION FOR THE RADICAL CURE OF UMBILICAL HERNIA.*

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The results of operations for the radical cure of umbilical herniæ in adults have, heretofore, not been encouraging. These patients are usually obese, with attenuated abdominal muscles, and the thin, rigid character of the ring does not offer mechanical conditions advantageous to lasting union.

The principles of closure have been the same as after an ordinary abdominal section, the object being to split the fascia at the ring margins laterally, until the recti muscles are reached, and then, by a series of buried sutures, to reconstruct the abdominal wall in layers. The defect in this method is the nat [illegible] the recti muscles at the level of the [illegible] this point the muscular structures are practically in contact, but above there is from one-fourth to three-fourths of an inch separation. To bring the recti together in this locality amounts to a muscle transplantation. In a small hernia this muscular approximation is not difficult, and is the operation of choice, but in the larger openings an inch or more in diameter, it is impracticable, and, so far as I have been able to judge, the attenuated muscles, when secured, are not of great value as retentive agents in this variety of hernia. In very corpulent subjects the muscular separation is greater. If such a patient, lying on the back, be directed to rise, bringing into play the recti muscles, the lateral deviation at the level of the umbilicus is easily shown, and in the majority of cases demonstrates the impossibility of bringing them firmly into median apposition. The strain in these cases is from above downward rather than laterally. This is well shown by the pendulous abdomen commonly found in very adipose people, in many cases covering the pubes and often the region of the upper thighs. On assuming the recumbent posture the stretched tissues allow of great mobility and one can often grasp the abdominal wall and overlap a number of inches without difficulty. The fibrous margins of the ring in umbilical hernia usually lie entirely above the junction of the urachus and the remains of the hypogastric arteries. These latter structures, as they deviate from the middle line below, often allow of the formation of considerable pouches between them and the urachus, showing their weight-bearing function.

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* Read at the Fifty fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E Moore and De Forest Willard

The causation of acquired umbilical hernia can be said to depend on downward traction of the abdominal walls and their contents brought to bear on a fixed point at the umbilicus, causing separation, and before this takes place there is an increased vertical lengthening of the abdominal wall and also, to a less extent, in a lateral direction.

In a paper[1] read before the American Academy of Railway Surgeons, Oct. 4, 1898, I called attention to the impracticability of covering in the defect, left by excision of the larger umbilical hernia, with muscle, and advocated the overlapping of the aponeurotic structures which were already at hand, securing a wide area of adhesions in place of edge-to-edge union. This method we had then employed in five cases; in three the overlapping was from side to side, and in two from above downward. Extensive lateral incisions to find sufficient muscle to make the routine operation described by surgical writers compelled us, as a matter of necessity, to overlap from above downward in these two cases and, to our satisfaction, we found the parts came together with less tension than when drawn laterally, and time proved that the strength of union was as lasting.

The first of these overlapping operations was done in 1895. We have now made this operation 35 times, overlapping from side to side 10 times, and 25 times from above downward. There were no deaths. We have found the operation so much easier from above downward that we now employ it exclusively. We have recently had the majority of these cases examined and the permanency of cure was most gratifying; in only one case had there been a relapse, and in this one there was merely a boat-shaped stretching. The operation had been done from side to side, and the patient was much relieved from her former condition. So far as we could find out, there were no failures when the vertical overlapping had been properly accomplished. In a paper[2] on this subject read before the American Surgical Association, May, 1901, I again called attention to this method. Further experience with the operation, as well as good results in the hands of other members of the profession, has more than ever convinced me of its value. Writers on this subject deplore the poor results of operation for this variety of hernia and even the latest compilations speak most disparagingly as to the permanency of cure by any method, and this was previously our experience. To-day the expectation of cure approaches that of inguinal hernia. The operation is easily and quickly performed. The steps are as follows:

1. Transverse elliptical incisions are made surrounding the umbilicus and hernia; this is deepened to the base of the hernial protrusion.

2. The surfaces of the aponeurotic structures are carefully cleared two and a half to three inches in all directions from the neck of the sac.

3. The fibrous and peritoneal coverings of the hernia are divided in a circular manner at the neck, exposing its contents. If intestinal viscera are present, the adhesions are separated and restitution made. The contained omentum is ligated and removed with the entire sac of the hernia and without tedious dissection of the adherent portion of omenta.

4. An incision is made through the aponeurotic and peritoneal structures of the ring extending one inch or less transversely to each side, and the peritoneum is separated from the under surface of the upper of the two flaps thus formed.

5. Beginning from two to two and one-half inches above the margin of the upper flap, three to four mattress sutures of silk or other permanent material are introduced, the loop firmly grasping the upper margin of the lower flap; sufficient traction is made on these sutures to enable peritoneal approximation with running suture of catgut. The mattress sutures are then drawn into position, sliding the entire lower flap into the pocket previously formed between the aponeurosis and the peritoneum above.

6. The free margin of the upper flap is fixed by catgut sutures to the surface of the aponeurosis below, and the superficial incision closed in the usual manner. In the larger herniæ the incision through the fibrous coverings of the sac may be made somewhat above the base, thereby increasing the amount of tissue to be used in the overlapping process.

In very large protrusions in which part of the hernial contents is irreducible the patient should be kept in bed on a reduced diet and directed to manipulate the hernia, with the intention of replacing as much as possible. The irreducible portion must not be forced into the abdominal cavity after losing the "right of habitation." If of omentum only, it is readily disposed of by excision; if intestine, enough omentum previously contained in the peritoneal cavity should be removed to allow of reduction of the bowel without pressure. The patients should be kept in bed three to four weeks after operation and, after getting about, should not apply a truss, although most of these patients prefer to wear an abdominal supporter for a year. Piccoli[3] reports a case successfully operated on in August, 1899, after the lateral plan, and refers to a case reported by Bonomo, operated on Dec. 9, 1899, with a favorable result. J. A. Blake[4] reports several cases operated on by the lateral method during the year 1900, and refers to an article by Sapiejko,[5] in which a lateral operation is described.

The writer had described and operated by the lateral overlapping plan several years before the cases reported by these authors and the lateral operation is a good operation, but it is not as good as the vertical method, in which the retaining structures are given a bearing point above the site of the umbilicus and intra-abdominal pressure thus acts to prevent separation instead of aiding it.

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[1] Annals of Surgery, January, 1899.

[2] Annals of Surgery, August, 1901.

[3] Centralblatt fur klinische, Chirurgie, Jan. 13, 1900.

[4] Medical Ass'n of Greater New York, Jan. 14, 1901.

[5] Rev. de Chir., 1900, No. 2, p. 240.

DISCUSSION.

Dr. A. J. Ochsner, Chicago—The fact that with but a few exceptions every text-book on surgery, and every book dealing with the question of hernia, claims for the radical cure of umbilical hernia: First, a large mortality; and second, a large proportion of recurrences, makes this paper of especial value to this Association.

The writers of these works have no appreciation whatever of the proper treatment of umbilical hernia. One of the most distinguished authors on the subject of herniotomy told me personally only a few months ago that he operated on these cases only when he was absolutely compelled to, simply because he did not know how to operate on them. As a matter of fact the reason there is a high mortality in these cases is because of the extreme and unnecessary traumatism occasioned by the ordinary operation. The ordinary operation contains at least ten times as much traumatism as is necessary. The operation usually described in text-books contemplates the establishment of conditions very similar to those which were present before the umbilical hernia was produced. The fact that those conditions were unfavorable for a permanent cure is shown by the fact that the umbilical hernia occurred. Statistics show that umbilical hernia in children heals spontaneously in nearly 100 per cent. of all cases, simply because it is impossible to keep a circular opening in any part of the body open, unless it is lined with a serous or an epithelial lining. So long as the opening is kept circular it will heal spontaneously. We find in all of these cases in the adult that there is a dragging of the abdominal wall transversely, causing the opening to assume an elliptical form. Then we find that the preperitoneal fat is forced up into this opening, the consequence being that the hernia occurs. To relieve this condition, we know that we can establish a condition very similar to the linea alba. We have the aponeuroses of the external oblique, the internal oblique and the transversalis muscles; we can make use of these, but we should not do so in such a manner as will prevent their drawing from side to side. This can be accomplished by the operation described by Dr. Mayo. In this manner the greater the tension on the abdominal wall the more firmly the hernial opening becomes closed. That is the reason he does not get recurrences. If the patient vomits, the more he vomits the tighter the wound is closed. I had the good fortune of learning this trick from Dr. Mayo several years ago. I have operated nearly as many times as he has, but I always closed the wound from above downward. In one-third of his cases he made the same mistake that Blake and the other gentlemen made who have described similar operations, but who overlapped the edges from side to side instead of from above downward.

The great advantage in this operation does not only come from the fact that the strong fascial layers are doubled but also from the fact that the deformity which always exists in these cases, namely, the shortening of the transverse circumference at the level of the umbilicus and the lengthening of the distance between the sternum and the pubis, is utilized to advantage.

Dr. J. B. Murphy, Chicago—It is a particular pleasure for me to discuss a paper on umbilical hernia, because I have had some misfortunes. I was very much surprised at the close of my clinic one day to have a visiting physician ask me if a case of umbilical hernia ever got well. That was an actual occurrence. He had just visited several other celebrated clinics and he said that all the cases he had seen operated on there died. It frightened me, and that very day the patient whom I had operated on died. That caused me to make some investigations and to ask some questions and it led me to visit Dr. Mayo and observe him do this work. My particular patient died from one of the causes that is cured by just this operation, and I believe that many of the other deaths have resulted from just this same cause, because in looking up the literature you will find that most of them died shortly after the operation. My patient died of pulmonary edema. In doing the lateral operation, the tension put on the suture incapacitates the patient for diaphragmatic breathing and the patient has an edema beginning shortly after the operation, and if the irritation is sufficient, in one, two or three hours after the patient has recovered from the anesthetic, you will see him panting for breath. It was my extreme pleasure, after doing the first operation by this method, to see that the patient was vomiting without even the slightest distress at the seat of the wound, and the reason for that is the excellent mechanical application, the one applied on the other, giving such perfect support that there is no tension on an edge-to-edge suture. I feel that the question of umbilical hernia is solved primarily and finally by this very simple, complete and perfect operation.

Dr. Wm. H. Wathen, Louisville, Ky.—If we perform the operation for umbilical hernia, as outlined by Dr. Mayo, we have no bad results following the operation, and then consider the previous methods in vogue for this procedure and the high mortality following them, we will come to the conclusion that there is no operation which has more simplicity about it, or which may be performed with less mortality and with better results. Since I saw the report of Dr. Mayo's first operation, I have been performing it, and find it practically universally successful. About a year and a half ago, a lady consulted me, who was so large and fat over the abdomen that certainly no surgeon would have undertaken the operation after the old method, the hernia being very large, with many adhesions. She was operated on by the transverse overlapping method, taking away a very large piece of fat, and recovered without pus or temperature. She now has an abdomen changed in shape, and is perfectly well in every particular. I have had no trouble in these cases during the operation or subsequent thereto.

If I understood Dr. Oschner correctly, he said that the great success in these operations was due to the fact that it shortened, or contracted the transverse diameter, and elongated the abdomen longitudinally. Well that is what may occur in the old vertical method, but not in the overlapping transverse method. You shorten the abdomen vertically. The pressure transversely cannot pull the surfaces apart, and the patient continues to get well.

Dr. William H. Magie, Duluth—I wish to endorse the operation of Dr. Mayo by reporting two cases of umbilical hernia that I have operated on during the past year. They were both very fat women, the hernias were of long standing, and the results so far have been very satisfactory. I have used the same method in operation for cures of ventral hernia resulting from surgical operations in the abdominal cavity.

Dr. Alex. H. Ferguson, Chicago—A lateral operation for umbilical hernia is indicated in certain cases, and in others I would commend the operation worked out by Dr. Mayo. In either instance the procedure is a plastic one in which the surgeon makes the best use of the material at hand to most securely prevent a return of the hernia. When the opening is not very large, the recti muscles in good condition, the lateral operation gives excellent results, remembering that the muscles must be liberated and sutured in mid-line over the coapted peritoneum, and transversalis fascia. Any redundancy of the pendulous fat in the abdominal wall may be removed at the same time and greatly to the comfort of the patient. This I have done several times.

When, however, the opening is large it can be more easily closed by overlapping the structures from above downward and thereby obtain a very strong abdominal wall. But let me suggest an additional step which furnishes more strength to the umbilical region. That is to slit open the sheaths of the recti and bring them nearer together over the overlapped fibrous structures. This will leave these muscles in a position to protect by their contraction a weak place during sudden increased intra-abdominal pressure.

While I agree with Dr. Murphy that it is not a good thing to constrict the abdomen, still I should be inclined to attribute the cause of death in his case as due to something else.

Dr. William J. Mayo, Rochester, Minn.—In answer to a question I will say that we have removed the fat in two cases. I feel somewhat overcome by the remarks of Drs. Ochsner and Murphy, and I think we must all take them as a joke. Dr. Ferguson has insisted on saying that this is the Mayo operation. My own feeling is that all this stuff about priority is bosh. I have no doubt that this operation was done by Hippocrates; he was a very sensible old fellow and quite likely, as they get in deeper in the Egyptian ruins, they will find that this operation was performed by the inhabitants several thousand years ago.

REPORT ON OPERATIVE TREATMENT OF GRAVES' DISEASE.*

T. C. WITHERSPOON, M.D.
ST. LOUIS.

Case 1.—In April, 1895, a patient presented herself for treatment suffering from a well-developed Graves' disease. Exophthalmia was not marked, but the cardiac frequency and the thyroid enlargement was present. Tremor, loss of flesh and bowel symptoms made the case one of undoubted Graves' disease. She submitted to partial thyroidectomy under chloroform and made a nice recovery. Two years afterward I received word from her through a friend that she was well and strong, able to attend her duties and suffering none of the former symptoms.

Case 2.—In 1898 a patient was sent me who suffered from a similar condition. She was 52 years of age, very thin, having lost a great many pounds of flesh, suffered from recurring diarrhea and was very weak, practically bed ridden. The pulse rate was 140 to 160, the thyroid very large and vascular, exophthalmia not marked. The right lobe being the larger was removed under cholorform anesthesia. There was very free hemorrhage from the inferior thyroid, and on account of pulse weakness she was given a pint of saline under the skin while on the table. This was repeated in two hours. Within six hours the pulse had regained the rate and quality which characterized it when she went on the table. During the night it began to increase in rate and lose in strength. There was no response to stimulants and in forty-eight hours she died.

Case 3.—The third case on whom I operated was a woman 59 years of age. She was born in Missouri and had lived in St. Louis for many years. Her first visit to me was in September, 1899, at which time she suffered from very evident Graves' disease. The goiter was well marked, the right thyroid lobe being the larger, there was moderate exophthalmia and the pulse rate was from 130 to 150. She had lost a good deal of flesh, the skin was always moist because of an exhausting sweating, the nervous symptoms were marked, heard strange noises and had ideas of persecution; the respiratory movements were extremely shallow and pectorals wasted, bowels were diarrheic, urine contained casts and albumin, and was slightly increased in the 24 hour amount. A diagnosis was made of chronic interstitial nephritis associated with Graves' disease. I was of the opinion that her general condition contraindicated so extensive an operation as partial thyroidectomy and advised a double sympathectomy. September 10 the three ganglia on the right side were removed and on the 21st those of the left, under chloroform. The healing was primary and shortly after the second operation the pulse showed improvement in quality and rate. Her general condition was likewise benefited, the bowels ceased to become overactive, the sweating stopped, the weight improved. December 14 she had so far recovered that she took a trip into the country to take advantage of the fresh air and outdoor life possible there. From her son I learned later that in the latter part of the month of February while out riding she became chilled and died two hours afterward. He states the pulse rate had become normal before her death, the exophthalmia had almost entirely disappeared and the goiter fully half. Her mental condition was normal and the nervous symptoms had cleared up to a large extent. What part was played by the nephritis in her sudden death can, of course, be only a matter for conjecture, but it must be admitted the operation was followed by decided relief.

During the last twelve months I have had a series of six cases presented me for operation in all of which partial thyroidectomy was performed. They were as follows:

Case 4.—About the first of May, 1902, S. S. was sent to me with a pronounced exophthalmic goiter. She had been under treatment without benefit and an operation was advised. She was born in Germany, came to St. Louis when 16 years of age, and has lived here since, a period of 23 years. There is nothing of note in her family history. At the time of her first pregnancy the thyroids became larger and remained so afterward. There were no symptoms of Graves' disease until about a year before I first saw her. At that time she noticed an increased nervousness and rapid heart action. At the time of the examination she had a well-marked exophthalmia and stated that the intensification of the symptoms dated back five months, at which time she became pregnant. Her general condition indicated a process of only moderate severity. There was not a great loss of flesh and her appetite and strength were fair. She did suffer from a marked degree of nervousness, however, and insomnia was distressing. The pulse rate varied from 100 to 120, exophthalmia marked, Graefe symptom present, the right thyroid lobe the larger. Other symptoms were present, as tremor, sweating, headache, recurring diarrhea. She had had attacks which resembled asthma for years, and these had been intensified.

May 6 the right lobe was removed under local anesthesia. After finishing the operation and while putting on the dressing she had a slight tetanic attack, general in character and accompanied with a loss of consciousness for the moment. No ill effects followed this, and after being placed in bed she felt quite easy, except for a mild degree of burning in the area of the wound. This lasted only two hours and disappeared. The improvement in her condition was apparent in two days, and within the next week she was fairly free from nervousness. The pulse dropped to 74 in forty-eight hours. There was rapid improvement in the exophthalmic condition also. During the remaining time of pregnancy she showed only such symptoms as are characteristic of the period. She was delivered at full time of a healthy child, making a nice recovery herself. At the present writing her condition is quite normal.

Case 5.—Mrs. B. came to me in June presenting the following history and conditions: Born in St. Louis, lived here all her life, 35 years, parents were German, she was married some years, but had no children; examination revealed no pelvic disturbance. Gives no family history which could shed light on her trouble. About nine months before coming to me she noticed the first marked symptoms of her present disease, although for some months prior to that time she had noticed an increased nervousness and a tendency to tremble when using the hands. I found on examination well-developed thyroids, larger on right side, pulse varied from 120 to 130, exophthalmia marked and Graefe and Moebius symptoms were demonstrable. The other symptoms were present, tremor of the hands, diarrheas, sweating, loss of flesh, sleeplessness, easily excited, headaches, dry hair coming out in rather large quantities. The right vessels gave both a distinct bruit. An interesting feature was the pronounced prominence of the left eye.

The right lobe was removed under local anesthesia and betterment of the condition immediately followed. At the present time all of the old symptoms have disappeared, including the exophthalmia. She has gained in flesh and feels well.

Case 6.—In July I removed the right thyroid lobe of a patient in one of the city institutions. She presented the usual symptoms and had in addition a movable right kidney and slight uterine prolapse. After the operation she made a rapid recovery, sleeping well, no tremor and gaining in strength. After leaving the institution I lost track of her.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

CASE 7—Mrs W., age 62 born in Switzerland lived in St Louis eighteen years, was sent to me in July for an operation There was no family history of importance except that a daughter of 36 years of age has at the present time a simple goiter She had a goiter herself for twenty years, during which time there was no indication of trouble from it The symptoms of Graves' disease dates from the time of the death of her child three years ago This daughter died of tuberculosis In January, 1902, she suffered an attack of pneumonia, from which she did not fully recover Effusion into the left pleura followed it and on May 17 three pints of this was removed Again on the 27th this was repeated, removing the same amount The physician in charge at the time reported on the character of this fluid, stating it was not purulent nor bloody The expectorate was likewise examined and found to contain no tubercle bacilli At this time the symptoms of Graves' disease became very pronounced The tremor marked, muscular weakness with emaciation sufficient to cause her to remain abed, insomnia, emotional perturbations, pulse varying in rate from 135 to 160, and frequent diarrheic attacks The exophthalmia was not readily noticed unless attention was called to it

The right thyroid lobe was the larger, and this one was removed July 20 It had grown downward into the chest behind the sternum and was adherent to the trachea for a short interval The vessels were very friable and the forceps pinched through the inferior thyroid during the operation and bleeding became very active This necessitated a haphazard catch, which included the inferior (recurrent laryngeal) nerve Immediately a fluttering vocal cord was the result In tying the vessel after stopping the hemorrhage it was carefully separated from its surroundings The voice returned very slowly afterward, never to its normal quality A pneumonia was set afoot, which appeared on the fifth day in the left lung, the seat of the former attack Eventually this subsided in part and the patient began to improve A careful examination still failed to reveal tuberculosis In six weeks the nervous symptoms had nearly disappeared and the rate of heart action was between 90 and 100 There was a slight, constant fever and cough and the fluid reaccumulated in the side On aspiration this was found to be purulent An operation was strongly advised, but refused until late in October By this time she had lost the flesh gained just after the operation on the thyroid and was very weak The process had extended to the lung and a large quantity of stinking pus was being expectorated constantly A portion of rib was removed under local anesthesia and a drain established She never rallied, however, and died about Christmas last There was a complete disappearance of those symptoms which were distinctly characteristic of the Graves affections before her death

CASE 8—A widow, aged 44, born in Germany, came to St Louis 16 years ago She has one living child healthy She gives no history of former trouble which could bear on the present trouble except that 18 years ago she contracted a venereal disease from her husband which confined her to the hospital for several months The cervix of the uterus is entirely gone and a small opening in the midst of scar tissue is the os uteri Menstruation is normal except scant in amount She gives no history of syphilis Her pulse varied from 95 to 110, some degree of exophthalmia, goiter *goose egg in size* the right lobe the larger A fine tremor, muscular weakness, diarrhea, sweating, nervousness, sleeplessness, headaches were present I removed the right lobe of the thyroid in September The pulse rate became normal after the operation, the general condition improved and the tremor left She still suffers however from headache, fullness in the throat and complains of weight in the pelvis This, I believe, is due to the uterine condition

CASE 9—Just operated on Patient is 29 years of age, born in Kansas, and has lived in various parts of the country during the last ten years Of herself she writes the following history, and because of its exactness I give it in full Rather anemic looking since fifth year, scrawny shoulders and small arms All through life frequent headaches in *forehead* In sixteenth year moved to Colorado living in altitudes of from 6,000 to 9,000 feet, where was employed as a railroad clerk for three years Felt well greater part of the time Eyes would occasionally become inflamed, riding on trains augmented this trouble Vision was not impaired for three years after first inflammatory attack About twentieth year moved to Memphis, Tenn, eyes becoming more often sore Oculist advised against glasses and used some drops in eye for two months daily Vision now became impaired, objects blurred, lines of type ran together Saw another oculist, who fitted glasses, said trouble was flattened cornea Wore these glasses with some relief for about a year, eyes gradually becoming worse, inflamed with imperfect vision In twenty fourth year another oculist fitted glasses, saying the trouble was compound myopic astigmatism with the consequent inflammation Great relief followed, worn the glasses since with improved vision, inflammation lessened Past three years has had many spells of aching back of left eye and followed by reddened conjunctiva About the twenty fourth year hand became unsteady when writing During the summer months each year while in Memphis got debilitated and irritable During the winter of the twenty-fifth year worked all day and until 11 o'clock at night Kept up by large quantity of alcoholics In spring of same year, 1899, passed first class examination for old line life insurance No enlargement of neck was noted at the time Pulse was a trifle quick, attributed to running up stairs. During the summer became gloomy, brooded over unfair treatment thought she had received at the office where working Spent month of July in St Louis, read much pessimistic and agnostic literature Thought a great deal about suicide, did not contemplate suicide, but the subject was more attractive than others Returned to Memphis August of the same year in the same state of mind Friends tried in every way to divert her mind into new channels without success Again worked hard the fall and winter of the twenty sixth year Gradually mind became normal December, 1899, noticed neck seemed to look too full in front, friends thought it was all right In winter was tired all the time, sore and ached all over on awakening, very nervous and irritable Hands and feet became swollen and red, burned and itched when taking exercise For last three years perspired profusely on slightest exertion Hands and face would be moist and clammy while those about were dry and comfortable Did not sweat at night when quiet in bed Hair became faded and dry, but did not fall out to any appreciable extent During the summer of 1900 lost much flesh and became more nervous and weak In the fall some improvement

About Jan 1, 1901, noticed rapid heart action and shortness of breath Remained in bed for a part of February complaining of prostration, nervousness and insomnia At this time the goiter became quite perceptible Dr R Maury prescribed tr iodin applications without benefit to the goiter Massage was then resorted to for a month with no benefit If anything this last increased the nervousness The professor of nervous diseases at the Memphis Medical College then prescribed Norwoods tincture of veratrum viride, to be taken constantly and a mixture of hyoscyamus, potassium bromid and chloral to quiet This latter was taken at bed time for two years For the remaining time the bromid alone has been used to produce sleep (60 to 100 grs)

Exophthalmia was noticed in June, 1901 At this time she gave up all stimulants, as they caused a sense of weakness and she had to go to bed after taking them Later in same summer went to Lake Superior for a visit and improved remarkably, gaining 18 pounds In fall relapsed into old condition on returning south Complained at this time of having both knees give away while walking, causing her almost to fall at times Arms and legs became numb after resting in one position for a while Last summer spent at Put in Bay, but an exhausting diarrhea prevented improvement

In fall went to Colorado where nervousness and rapid heart increased and mental condition became worse than ever Had maniacal spells screamed, tore clothing and refused to remain in the room with any one Physician in charge gave thyroids and strychnin and if anything the symptoms were intensified. Pulse was frequently as high as 150 and felt like a pile driver in the neck. Thyroid increased in size. Took 400 grains of bromid in two hours to quiet. Later returned to the chloral mixture and a tonic. During the last three months suffered from alternating diarrhea and constipation. Appetite fluctuated from a craving for food to a distaste for it. Limbs twitched in bed and insomnia continued. Sore around body and hung clothes from shoulder; temperature of 99 to 100 in the late afternoons. Has a cough which developed in December, 1901, and has continued more or less ever since. At menstrual periods the gland seems to become turgid and causes a sense of choking from pressure.

The only family history which could bear on this condition is on the mother's side. She had asthma until her sixteenth year, always had an affection of the right side of the mouth and jaw. Right lobe of thyroid slightly enlarged and had been so from childhood. Never had the other cardinal symptoms of Graves' disease. Mother of seven children, three died in infancy; one son and three daughters are living. Son as a child suffered from nervous twitching, is now 40 and healthy; daughter, aged 32, has writer's cramp at present, always nervous. Other daughter always free from nervousness. Mother in good health at present.

July 15, 1903.—This patient is in better health than for some time. Exophthalmia gone. Pulse 80 to 90.

These cases of Graves' disease have been in the past most unsatisfactory to treat. Nearly every effort to bring about permanent relief has been fruitless. We have all seen temporary benefit follow the administration of different remedial agents, and have been at times tempted to believe that much of permanent character had been accomplished, only to be disappointed later when, after losing sight of the patient for a while, they would return in a more deplorable condition than ever. Failure in this disease has, as in many other maladies, led to the adoption of a host of remedies for its cure.

It is exceedingly interesting to follow the views of the various writers of the different decades on the subject, and note the changes in the methods of treatment. We read of the disease being a dyscrasia, then, again, a blood impoverishment expressing itself by changes in the thyroid, eyes and heart; later the opinion of alimentary intoxication, a sympathetic disease or a pathologic condition of the central nervous system located in the area of the pons or medulla. Of the recent authoritative writers Moebius adheres to the belief that the seat of the lesion is in the thyroid gland, while Kocher, of Berne, considers the thyroid condition an expression of a central lesion located in the cerebrospinal axis. Mention should be made of the work done by Gley, of Paris, showing a disturbed parathyroid relation with the thyroid as a possible cause of the disease symptoms. As from time to time new light has been shed upon the subject, bringing modified ideas of its pathology, the methods of treatment have accordingly been modified or changed altogether. Iodin, strophanthus, veratrum viride, bromids and chloral, galvanism, thyroid extract, adrenalin, sodium phosphate, sodium salycilate, dietetic regulation, massage, the serum of thyroidectomized goats, the flesh and milk of these animals, and lastly, various surgical procedures, have each been advocated as most helpful.

Naturally, the question arises, what are we to do for, how are we to relieve this class of patients when they come to us for relief? Is there an underlying cause for the condition which can be attacked alike in each case, is there a procedure which could become universally applicable? In the light of our present knowledge we can not hold to too strict limitations, though no doubt were the exact nature of the disease known some rule of action would become applicable to all cases. At the present time a certain degree of empiricism must enter into the treatment; our conduct toward these cases must rest to a large extent on our experiences in the past. We must notice where the internist obtains good results, and weigh carefully the data he presents; likewise have we to consider the surgeon's side of the question, and noting here success and there failure, obtain an explanation of the different results by the different manners of operation, and the individual characteristics of the patients.

I present here the results which I have obtained in cases in which internal medicine failed to give relief. The outcome has been very satisfactory to me, and has helped very materially to lead me to the belief that these cases are eminently surgical. Since reading Kocher's article, this belief has been confirmed, and I feel enthusiastic in supporting proper surgical methods for the relief of Graves' disease. Of course, do not understand this to mean that I advocate operation in every case, regardless of all conditions, local or general. In the first place, we must be governed by those rules which are followed in advising operation on any part of the body for the various conditions which fall to the surgeon's hands. In the second place the symptoms which characterize Graves' disease must be given due consideration, and proper value placed on the conditions which characterize each individual case.

A number of surgical procedures have been proposed. The injection of agents into the gland which tend to destroy its secreting power is dangerous, and should never be resorted to.

Ligation of the thyroid arteries to reduce vascularity of the gland has a warm advocate in Kocher. This method was recommended by Woefler for the common goitre, but Kocher put it to use in the exophthalmic variety. Rehn, Trendelenburg, Rydygier, Wilmers, Reinbach and Mikulicz have reported cases treated in this way. Ligation of the superior thyroid is relatively easy, but the inferior can not be gotten at through an incision in front of the sternocleidomastoid, except by luxating the gland upon the surface, in many of the cases. In selecting the vessels, attention will be paid to the amount of vascular degeneration of the different parts of the gland. It is rare that the whole gland is alike affected. Those vessels are ligated which best control the vascularity. The operation is simpler than removing the lobe, and is to be recommended in those cases where the symptoms remain intense after resting the patient. Later, however, this procedure should be supplemented by a partial thyroidectomy in the large percent of cases. The initial ligation always renders the removal of the lobe easier than where this is done primarily.

Unquestionably, the operation which gives the greatest degree of satisfaction is the removal of the most involved lobe of the thyroid gland. Very frequently this is the right. Why this should be so is difficult to understand. Many explanations have been given, but none satisfactory. Two incisions are to be recommended, one in front of the sternocleidomastoid parallel to its anterior border, and the U-incision recommended by Kocher with the convexity over the sternal notch. Kocher recommends the latter because it allows easy access to the median line, where after separation of the muscles which lie upon the trachea the thyroid lobe can be readily reached. This avoids cutting any of the muscles of the neck. The scar is low and not readily seen. Personally, I prefer the incision anterior to the muscle edge. The length need never be more than 4 inches, and it allows the least bloody handling of the gland. The one objection to the incision is that it necessitates the cutting of some fibers of the sternothyroid or the sternohyoid. This is inconsequential, for the fibers of these muscles run nearly enough parallel to allow of separation directly through their bellies, and only a few fibers of the one or the other have to be cut at the ends of the incision. This opens the field perfectly for the largest goitre I have had to deal with. The scar is small and located in an anatomic position which to some extent renders it less apparent.

There are some precautions to be mentioned. The capsule of the gland is usually adherent to it, thickened and very vascular. In separating it from the enclosed gland a very considerable amount of hemorrhage follows. This is avoided to a certain extent by ligating the superior thyroid artery first. Just under the muscles, coming from above and entering the top of the gland, this vessel is easily found. It frequently enters as several branches, and care must be exercised to ligate all of these if the main trunk can not be gotten at. The next difficult step is securing the inferior thyroid artery. This can only be done after raising the gland from its bed and carrying it toward the median line. The whole vascular apparatus is so friable that it is possible that some vessels of size be torn in this separation and bleeding hard to control. To render this less difficult, bring about very careful, gradual luxation, catching each bleeding point with a forcep as it occurs. After reaching and ligating the inferior thyroid all forceps can be removed, as these two vesesls supply the area with blood. It is wise to ligate the large veins, however, for, though forcipressure suffices to check their bleeding for the time, their lumens are apt to open later and allow of a large clot formation in the wound. A very difficult point in the operation is catching hold of the highly vascular gland with any instrument with which to hold it. Vulcella forceps tear out and cause very serious hemorrhage. I find it expedient after exposing the anterior surface of the gland, to pass heavy mattress stitches of silk from side to side, and when these are tied the forceps catch better, and bleeding does not follow any little glandular laceration. Great care must be used in avoiding the recurrent laryngeal nerve, while dealing with the inferior thyroid.

This operation should always be performed under local anesthesia. Kocher recommends a 1 per cent. solution along the line of skin incision. I prefer a 0.125 per cent. solution. It is incorrectly stated that there is no pain after reaching the deep structures of the neck. These patients, very nervous and strung to a high pitch by the thoughts of the operation, do complain of pain in handling the deep structures, and are more readily controlled when the whole area is infiltrated. Eucain, being non-toxic when used in reasonable amounts, can be freely injected in very dilute solution. Infiltration is made between the gland and its capsule just ahead of the separation. I have never required more than ½ gr. of the drug to complete the entire operation. It is wise to reinfiltrate the skin before attempting to stitch the wound. All ligatures are made with a fine silk. I have not drained my cases. At one time there was a fear that the secretion expressed during the operation into the wound, and that formed and given off from the cut surface afterward were dangerously toxic. Drainage allowed these to escape, and therefore was recommended. There is some danger from the bleeding into the closed wound afterward, this causing suppuration and septic symptoms. A twelve to twenty-four hour drain is allowable when there is likelihood of much oozing.

Socin proposed the excision of enlarged nodes. This is not to be recommended, as it is incompetent and bloody, and many thyroids are uniformly degenerated. The Mikulicz operation, proposed for the ordinary parenchymatous goitre, has been resorted to in some cases of exophthalmic goitre with double enlargement. This operation consists in exsecting a portion of each lobe. This is too bloody to be recommended. A ligation of both superior thyroid arteries and a later removal of one lobe will accomplish more, and is more readily performed.

Jaboulay's operation of exothyreopexy is not to be recommended. The process of healing is too tardy, and the benefit not as assured as by either the ligation of the vessels or the partial removal of the gland. I do not know that this method is being adopted by any other than Jaboulay.

Lastly, I shall mention the operations on the sympathetics. Surgery of the cervical sympathetics had its initiative with Alexander, of Edinburgh, who resected the superior ganglion on both sides for epilepsy. This was in 1889. Jonesco, in Aug., 1896, resected the superior and middle cervical ganglia for Graves' disease, and the operation has since borne his name. A Russian surgeon by the name of Barocz proposed the operation as early as 1893. In my one case for exophthalmic goitre the operation was done in two sittings. The incision being made along the posterior border of the sternocleidomastoid. It can be readily done under eucain anesthesia.

Whatever the operation performed, general anesthesia should not be used. The myopathy and the vaso motor disturbance makes it exceedingly dangerous. This caution against general anesthetics holds also where the operation is for some other purpose than to relieve the symptoms of the exophthalmic goitre. Strange to say, the condition which follows operation upon these cases under general anesthesia is alike, whether done for the relief of the goitre or for other purposes, indicating that handling of the gland is not an explanation for it. I recall a case in which I used general anesthesia in the currettement of a bleeding uterus, following an abortion, in which all other means had failed. For two days following the operation the pulse rate was between 190 and 210. Eventually, she recovered from the immediate danger, only to succumb to an enteric attack later.

An objection to the use of cocain based upon the report of Riviere and Edmunds is not well taken; they assert the symptoms of cocain intoxication correspond to those of Graves' disease. Even if so, I can not agree with those who consider a unity of action in the two cases. However, in using eucain anesthesia, the amount of the drug is too small to produce additional intoxication.

The results from operative treatment of Graves' disease have been, on the whole, gratifying. Naturally, they vary somewhat with different operators, and also with the character of operation. Mortality has been surprisingly low; in 1896 Starr gave a record of 190 cases collected, with a mortality of only 12 per cent. Kinnicut the same year presented the record of 187 cases with 7 per cent. mortality. Schulz records 20 cases without mortality. The most valuable record of the present time comes from Kocher, of Berne, in which he had four deaths in 59 cases operated upon by himself. In these, the operation could not be held entirely responsible. Ligation had in the past a larger per cent. of mortality than thyroidectomy, but there should be no reason for this at the present time. In the group of cases

I present, the one death was undoubtedly the result of having given a general anesthetic.

The relief of the symptoms of Graves' disease has been gratifying. A fair average for the cures from operative procedures during the last ten years may be stated as 60 per cent.; of decided benefit 15 per cent.; and of deaths and failures, the remaining. In the 7 cases surviving the partial thyroidectomy performed by myself, the symptoms in all practically disappeared. Betterment was noted in all but one within forty-eight hours. The continuation of a high pulse in Mrs. W. was due to the pulmonary complication. Nervousness in each case disappeared almost completely before leaving the hospital, with the exception of the last case operated on but a few days since.

In one of my cases the nerve was injured by being grasped by forceps, and though the ligature was put about the vessel afterward, in such a manner as to avoid including the nerve, the voice was never quite normal afterward. Two of the cases had a slight tetanic convulsion immediately following the operation, but recovered as speedily as the others, without apparent ill effects. Mrs. B. had an interesting condition in that the right lobe of the thyroid was the larger, while the left eye was most protuberant. Exophthalmia in her case disappeared entirely after operation. Case S. S. carried her child to full term under a far more comfortable condition than was possible without relief of the exophthalmic goitre symptoms. After the operation certain symptoms may continue for a longer or shorter time before disappearing. The most persistent of these is the exophthalmia. In my cases ocular co-ordination was one of the first noticeable benefits. The physchic disturbances which follow, I believe, may be attributed to an infection of the wound in the majority of cases. This is illustrated by my last case. Three days after the operation she sat up, declaring herself better than for sometime. Her pulse and nervous symptoms certainly indicated this. On the sixth day she began to complain of pain in the area of the wound, which was the result of a slight inflammatory reaction. After that she became extremely irritable, taking marked dislike for her nurse. In her case the whole of the left thyroid was removed, with the exception of a small portion of the upper end, containing an apparently normal para-thyroid.

The question arises did the presence of the parathyroid produce this excitation, or was it septic? The removal of the para-thyroids in animals gives rise to symptoms like those of Graves' disease, but I am at a loss in the absence of the thyroid proper to account for the presence of these bodies producing any such effect.

The character of the gland changes differed in the various cases. Vascular degeneration was apparent in all, but in many there were primary conditions not related to the exophthalmic goitre, and in some, undoubtedly secondary changes, consequent upon the marked vascularity of the thyroid.

As time will not permit a discussion of these differences in detail, I shall have to present them in a later paper.

DISCUSSION.

Dr. W. W. Grant, Denver—I have had no experience, whatever, with the operation for the treatment of exophthalmic goiter. The operation is more particularly appropriate to certain cases of traumatic epilepsy and glaucoma. Kocher, in 200 or 300 operations performed during the last two or three years, has used a solution of cocain. He has abandoned the use of general anesthetics, because of the unsatisfactory results, one of which is vomiting, which may occur during the progress of the operation, and if any surgeon attempts to perform this operation on a reasonablly large tumor, and particularly on a vascular one, without due consideration of the difficulties and complications that may arise, he is liable to a rude awakening. I have performed only a few of these operations, but I invariably open the capsule. It is much easier to make the incision through the skin, dissect from the tumor, and then open the capsule. It is much easier to ligate the arteries, and the operation can be done much more quickly; and this is an operation demanding all possible celerity. I had a case two or three months ago, the largest of these tumors that I have ever removed. It occurred in a woman 40 years of age, and the tumor had existed for twenty years. Whether or not we can explain it, it is a fact that the condition of many of these patients, although seemingly good, is not so in reality. They have but little resisting power. They succumb to the slightest hemorrhage as well as to anesthetics, their condition becomes alarming at times during the most critical period of the operation. After opening the capsule I had no difficulty in ligating the inferior thyroid vessels, but in separating the tissues for the superior thyroid I opened a sinus with the finger and a blood stream came out, which, it seemed, was as large as the little finger. It was quickly arrested, and although but a small amount of blood was lost, it was noticed that the patient was in a state of collapse. I proceeded with the operation, while assistants used restoratives and the patient recovered quickly, and her convalescence was uneventful. I always prepare the patient for such an operation. I insist that the patient should remain in the hospital for three or four days (or a week or more) and use 1/30 of a grain of strychnia three or four times a day. I have found this to be very useful. If necessary, atropin may be administered before the operation as a heart tonic. I have found it very appropriate in these cases. The amount of cocain which Kocher uses is a 1 to 2 per cent. solution, but I have not employed it because I fear its effect on the heart, especially in large tumors. I have used chloroform, but fear general anethesia also.

Dr. Emmet Rixford, San Francisco—Goiter is a disease which produces fearful suffering to the patient, and whether we can cure those patients by operation or not, we are doing a tremenduous service to them, if we can alleviate their symptoms. But the operative treatment is not so simple as it may appear. The problem is an extremely difficult one. Exophthalmic goiter may be said to be of two sorts, primary exophthalmic goiter and secondary exophthalmic goiter. By the latter I mean those cases in which the disease or symptoms supervene in the presence of existing goiter, and prognosis from operative procedure is infinitely better in the latter class of cases. In these cases there is very often an encysted thyroid adenoma, which is the seat of the goiter. The operation is much simpler in those than in the so-called primary exophthalmic goiter. It simply requires the removing of the adenoma, if the capsule can be identified. The operation should be undertaken with the greatest caution in those cases in which the heart shows degeneration. Confidence is of the greatest value to such a patient, and he should be made to rest and become accustomed to the surroundings in the hospital, mental as well as physical preparation for the ordeal being necessary. The greatest danger, as Kocher has definitely demonstrated, is the anesthetic. I have seen the greatest trouble from an anesthetic, the heart beating faster and faster until it reached 200, then 300 per minute, and finally became too fast to be counted. These patients perspire tremendously. They do not stand antiseptics well, and they should be used with the greatest caution. They do not stand sepsis well and, therefore, the greatest care should be used to have a perfect technic. I have operated on four cases of exophthalmic goiter, protecting the wound by a piece of sterilized cloth around the neck, and held up by uprights at the end of the table, so that the patient cannot see the hemorrhage, and so that he could not see what was going on. The sight of the forceps and instruments, etc., increases the nervousness of the patient. I employ 1 per cent. cocain as a local anesthetic. I prefer to make the transverse incision where the tumor is not very large, principally because of the cosmetic effects. Women are much more likely to have this condition than men, and the transverse incision can be made very low down and the scar can always be covered by a bit of ribbon. The vertical scar always sticks up above the collar. The incision along the sternocleidomastoid always gives more room and where the tumor is large, it is the preferable operation. I was interested in hearing Dr. Witherspoon speak of opening the posterior fascia of the neck and enucleating the tumor. Kocher speaks of cocain being of assistance. In my last case that I operated on I thought that it was so simple that I could remove it without much of a wound. I did not draw the gland to the middle line, but worked from the outside. I passed the ligature around some vessels and the man indicated that he could talk. The ligature was removed and the man has since recovered his voice. As to the relief of these exophthalmic symptoms, in certain cases, it is wonderful and often immediate. I had one case that had been having from fifteen to twenty passages from the bowels a day. She suffered from profuse perspiration, the sheets had to be changed several times during the night. The patient did not expect to recover; in fact, she preferred to die. Within a week from the time of the removal of the thyroid adenoma she had lost thirty pounds in weight. She had been practically bedridden and unable to walk more than half a block before the operation, but within three months thereafter she had ridden a bicycle twenty miles over a rough country road.

DR. J. SHELTON HORSLEY, El Paso, Texas—I think we can not determine the proper surgical treatment of this condition until its pathology has been more definitely settled. There are two theories; one is that the disease is due to morbid impulses originating in the medulla and sent out over the sympathetic nervous system, the excess of thyroid secretion being due solely to these impulses. The other theory is, that the disease is caused by an excess of thyroid secretion in the blood, which acts on the nervous system. We know that in cases of exophthalmic goiter there is nearly always present an excess of thyroid secretion. However, this is not universally true, for some French surgeons have observed this disease in cases in which the thyroid gland had been previously removed by operation and in cases in which it was apparently congenitally absent, or at least so small as to escape detection. These facts have been very well brought out by Dr. Alfred Gordon, of Philadelphia, in a paper in the *Philadelphia Medical Journal* a few years ago. If this first theory is correct, Jonnesco's operation is unquestionably the correct procedure, as it permanently interrupts these impulses by taking out all of the cervical sympathetic ganglia. If, however, the second theory is correct, Jonnesco's operation is clearly inapplicable, and the only logical procedure is excision of the thyroid gland. As these two operations are founded on pathologic theories that are diametrically opposed to each other, it does not seem proper to use indiscriminately either the Jonnesco operation or excision of the thyroid, depending on whichever may be easier performed in a given case.

About three years ago I operated on a case of exophthalmic goiter having all the classical signs and symptoms of that disease. I did a partial Jonnesco operation, removing the cervical sympathetic ganglia on the right side of the neck. I intended removing them on the left side also, but the patient's condition forbade it, as her pulse was about 200 when the right side was finished. The operation was reported in the *Annals of Surgery* about eight months later, as it was one of the first cases in which the Jonnesco operation for exophthalmic goiter had been done in America. At the time of the report, she had improved wonderfully; pulse was 100 and she had gained in weight more than 30 pounds. The swelling in the thyroid, however, had not perceptibly decreased. Soon after this time, the patient began to get worse, and is now in the same condition she was in when first operated on. A second operation for removal of the ganglia on the left side of the neck, though proposed, has been rejected. It seems that cases of exophthalmic goiter may be cured, or at least relieved and improved, by either Jonnesco's operation or excision of the thyroid—operations which are founded on entirely different pathologic theories. It has occurred to me, in view of the improvement and subsequent relapse of my case and after reading the literature on the subject, that operation may have the same effect in exophthalmic goiter that is attributed to trephining in epilepsy. In other words, any operative procedure that is sufficiently severe to affect profoundly the nervous system, may result in relief of this disease, just as epilepsy is often apparently cured by simply trephining.

DR. T. C. WITHERSPOON, St. Louis—In regard to the indication for operation in exophthalmic goiter I believe that these cases should first be subjected to internal medication and then, if that fails, we should operate. In regard to the last Jonnesco operation I am not in a position to express an opinion on it. I was not gratified by the results obtained in these cases. I have not done it in exophthalmic goiter but once, but I have tried it three times in epilepsy and in none of the three cases did I secure results that were very gratifying. The one important thing that I want to speak of is the giving of a general anesthetic to these patients. We should not forget that when they are operated on for removal of the thyroid or for any surgical condition whatever they suffer tremendously from the effects of a general anesthetic. I remember a case I had in which the pulse was from 140 to 150, and I gave chloroform to allow of uterine curettement, and her pulse ran up to between 190 and 220, but she ultimately recovered from this condition. A general anesthetic is dangerous, and those who operate under general anesthesia are going to obtain poor results. In the next place those gentlemen who prefer simply to deal with the gland by primarily shelling it out I think are going to regret it some day. You should tie the blood-vessels early. There is but one way to tie them, and that is to get back of the fascia. If you get back of the fascia above the gland and run your finger behind the gland you can separate the carotid sheath and vessels from the gland, and render ligation and separation of the structures easy. I had one case in which a portion of the gland had grown down back of the sternum and another in which the gland was very deep in the neck, so that they are very different in shape and can not be dealt with alike.

PATHOLOGY AND TREATMENT OF SMALLPOX.

AN ANALYSIS OF OVER TWO THOUSAND CASES AND OF FIFTY AUTOPSIES.[*]

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CLASSIFICATION.

It is not my intention to discuss in detail the problem of the pathology of smallpox, but only to utilize in so far as practical the knowledge acquired by personal observation and autopsy in the treatment of this disease. The subject of the pathology of smallpox is in itself one of large scope and bearing, and worthy of single effort. Inasmuch as the tendency of medicine at the present day is to build the treatment of disease on the knowledge acquired of anatomic defects, it seems consistent to group the two headings.

The pathology of smallpox comprises at least three distinct considerations: First, the conditions arising from the poisonous influences of the variolous contagion itself (mainly purely speculative and relating to black smallpox). Second, the conditions arising from the maturation stage; and third, the incidental complications and sequelæ. In the latter class are considered boils, abscesses, phlegmonous conditions, erysipelas, the eye symptoms and the accidents to pregnancy.

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While it may be impossible in many instances to draw any line of demarcation between any or all of these conditions, it is well to have some basis of division, in order to more perfectly understand the clinical feature or features of the disease. Likewise, different varieties of the disease must be recognized and classified. I have unhesitatingly adopted the classification of Osler as the best and most perfect I have yet seen. His five distinct varieties of the disease are arranged as follows, and now form the generally recognized classification:

- Variola Hemorrhagica.
    - (a) Purpura variolosa; "black smallpox."
    - (b) Variola hemorrhagica pustulosa.
- Variola vera.
    - (c) Variola confluens.
    - (d) Variola discreta.
    - (e) Varioloid.

THE PATHOLOGY OF PURPURA VARIOLOSA.

But little is known of this condition, the rarest of all forms of smallpox, and in itself essentially and always fatal. The awfulness of the disease impresses itself on the physician and beholder. It is distinctive from its fellow forms in that the patient dies always before the appearance of an eruption. Those who have been fortunate enough to examine these cases postmortem report abundant blood extravasations into the serous membranes and loose connective tissue of the body; into the muscles, the joints and bone-marrow. These, in conjunction with the well-known external manifestations, namely, petechiæ of the skin of the abdomen, chest and crural region and flexures of the arm, and conjunctival ecchymoses, are the main pathologic conditions.

In the one case in which I have had the privilege of an interior examination, blood was found in the vitreous humor of the eye in profuse quantity. This is the one and only condition which I am able to add to the literature of variola purpura, and which I have so far failed to find in any text-book or book of reference on the subject.

Blood examinations have been made by various observers, including the writer. So far, nothing pathologic has been determined. The blood is thin and dark, and clots very slowly. No change was noticed in the size or shape of the blood corpuscles.

The main lesion in purpura variolosa seems to be a tendency to blood extravasation, either into interstitial tissue or in or through the mucous membranes. Whether or not its etiology is that of "blood dissolution" of acute infectious diseases or of the "bacterial coagulation thrombosis" of Unna is as yet unproven. A condition of acute hematophilia exists—severe in its intensity—and its obscure etiology and exact pathology is as yet a matter of pure speculation.

Mode of Death.—Death occurs certainly from the intensity of the variolous contagion, before the appearance of an eruption, and the intellect is unclouded to the end.

VARIOLA PUSTULOSA HEMORRHAGICA.

This variety of smallpox distinguishes itself from purpura variolosa in that an eruption always develops to a greater or lesser degree. Elevation of a macule to the papule always occurs. Hemorrhage may occur into the lesion at any time in the cycle of its existence. I have seen it occur in the macule, the papule, the vesicle and the pustule. Hemorrhage may occur into the conjunctiva and bleeding occur as in purpura variolosa from the nose, mouth, arms or vagina.

Internal lesions present themselves always in the respiratory tract. These are always the cause of much distress and discomfort to the patient, and undoubtedly have much to do with the unfavorable prognosis of this division.

In contradistinction to purpura variolosa the lesions of variola hemorrhagica pustulosa appear with perfect regularity on the mucous membranes as above described. On account of the varying conditions governing the secretion, digestion and motility they never go to full development, and present themselves as small ulcers with a surrounding inflammatory base. These undergo a retrograde metamorphosis, break down and discharge a thick purulent secretion which is coughed up by the individual in the form of a thick, ropy mucus. They often heal and leave no cicatrix or evidence of former inflammation.

I have repeatedly demonstrated these lesions at autopsy, even in the smaller bronchioles.

The differential feature, then, of variola hemorrhagica pustulosa is an eruption with hemorrhage into the lesion of eruption, and not the simple interstitial or subcutaneous hemorrhage, as exists in purpura variolosa.

Mode of Death.—The intensity of the poisonous element of the contagion of variola may cause death with the early hemorrhage into the macule as early as the fourth day, or the individual may go on with subsequent affliction and perish later of complication or sequelæ. Again, he may recover. In any event, this condition is very grave, and the pathologic conditions are many.

VARIOLA CONFLUENS.

Variola confluens presents the classical clinical picture of smallpox. It is the true type of the disease. Feeling better on the fourth or fifth day of an often undiagnosed illness, the patient may notice a small macule or a small round spot on the brow or wrist. On the next day, fifth or sixth, appear many more bright red spots, with a tendency to grow hard as the day advances. These papules or pimples undergo the successive changes of vesicle and pustule. On the eighth, ninth or tenth day they may run together, producing great blebs, and the individual falls into a condition of profound septicemia from absorption of poisonous toxins elaborated in the countless pustules. Co-incidentally bacteria develop in the blood and the patient dies from profound sepsis, and often in delirium.

Extensive pharyngeal, laryngeal, nasal and bronchial lesions are always present in severe cases of variola confluens. They are often confluent, and the writer has demonstrated at autopsy lesions almost co-extensive in length with that of the trachea itself. These internal ulcers again add to the severity and distress of the patient's condition, and are a frequent cause of pulmonary complication. The author has seen frequent deaths occur as the result of these often overlooked, untreated and unknown conditions of the respiratory tracts, and believes that too much emphasis can not be placed on the consequent necessity for proper therapeusis for these untoward conditions.

Pericarditis, pneumonia, pleurisy, albuminuria, if arising during the course of the disease, present their usual manifestations, and need not be considered in detail.

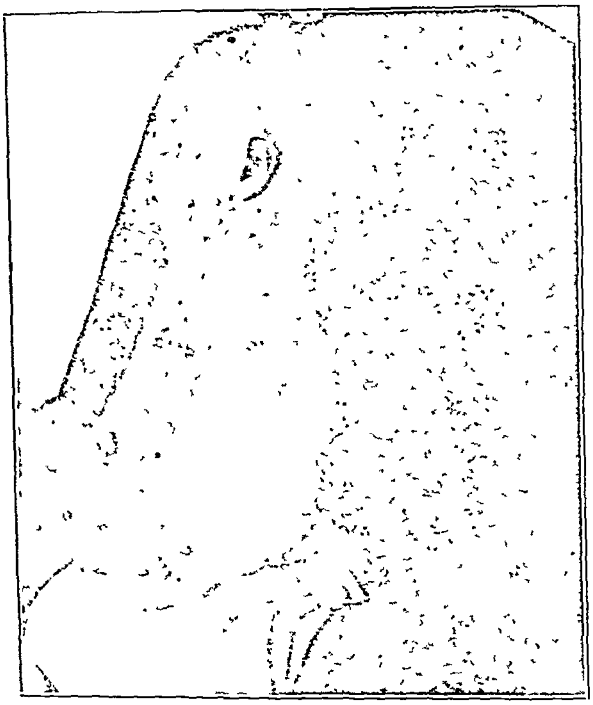
Of special symptoms, those which concern the eye are of prime importance. In former times one-half the cases of blindness were due to smallpox. In recent years, thanks to vaccination, this percentage has very materially decreased. The eye symptoms may be either extrinsic or intrinsic.

1. *Symptoms in which the external parts of the eye are the seat of pustules or pocks, namely, the lids and marginal conjunctiva.*

2. Where the eye or eyeball is itself involved. *a*, conjunctiva; *b*, cornea; *c*, interior of eye. The pocks or pustules appearing on the eyelid in no way differ from those of other regions, and except for their inconvenience are of no importance. Those which appear on the conjunctiva, if not adjacent to the cornea, are likewise of little import.

Those which appear on the cornea, however, have a distinct pathology, and their clinical history is often a matter of deep concern to the practitioner. Corneal ulcers appear most frequently in albuminuric patients. Rapidity of development is the characteristic feature of a variolous corneal ulcer. The pock may entirely destroy the area of the cornea on which it is situated within twenty-four hours. In such cases blindness almost invariably results.

Panophthalmitis may occur. I had one case in which I did an enucleation. Death occurred. Albumin was present in this case, as in many of my other eye cases.[1]



VARIOLA—SEVENTH DAY.

Fig 1—Showing the influence of the disease modified by vaccination (indicated by cross). The black spot on the arm is a taking vaccination Below, at the elbow, is a small confluent patch Notice the dissemination of the lesions and their limited number From the author's wards, at North Brother's Island, New York This child was one of a ward of children removed from the New York Foundling Hospital The original infecting child perished Vaccination was immediately practiced and the disease was mild in all the cases

THE HISTOPATHOLOGY OF THE SMALLPOX LESION.

It is to Unna of Hamburg that we owe any knowledge of the histology of the smallpox lesion whatsoever. His view is that the stratum mucosum softens and becomes edematous in its upper layers. An exudate appears; suppuration occurs from secondary infection, and owing to the fibrinous material exuded from the cells, septa are formed. The exact cause of the umbilication, however, is unknown.

Following the removal of the scab a depression in the skin presents itself. Depending on the ability or rapidity of epithelialization depends the character and degree of pitting. Quick epithelialization generally means an absence of marking and the converse well-known clinical fact has long been established, viz., slow pustulation is not only dangerous to the patient, but means extensive scarring as well.

The other varieties of variola present no distinct pathologic condition not already considered.

THE TREATMENT OF SMALLPOX.

The treatment of smallpox divides itself naturally into: 1. The prophylactic treatment; 2, the treatment of the disease itself; 3, that of its complications and sequelæ. Special consideration will also be given the red-light treatment.

SYNOPSIS.

1. Prophylactic Treatment.
    (*a*) Isolation and disinfection
    (*b*) Vaccination
2 Treatment of the Disease Itself.
    (*a*) Prodromal symptoms
    (*b*) Local treatment Treatment with baths Removal of pustules and opening of them to remove contents—emollient treatment—prevention of scarring and pitting.
    (*c*) Constitutional treatment; purely symptomatic and supportive, alcohol and strychnia Ammonium compounds for throat complications. Opium for hemorrhage, and intravenous infusions for the septic and hydremic stages.
3 Complications and Sequelae
Boils, abscesses, phlegmonous conditions, erysipelas, albuminuria, eye complications, edema glotidis, pulmonary and vasculo-cardiac complications Nervous symptoms and lesions
4. The Red Light Treatment.
A failure Results observed in over 300 cases in New York and Indianapolis

PROPHYLAXIS.

The prophylactic treatment will be dismissed with but a few words. In company with every other scientific mind, the writer regards vaccination and repeated vaccination as the only means of protection against the disease. I have no patience with those misguided health officers who advocate isolation and disinfection as the proper means of prevention. The city of Cleveland, Ohio, is a monument to such a fallacy. It is interesting to note that the health officers of that city who pinned their faith to formaldehyd have since retracted. The city of New York is a monument to the results which may be obtained by universal vaccination. Eight hundred thousand vaccinations in one year at public expense have abolished the disease in that city, as it will in every well-vaccinated locality.

Recent vaccination absolutely prevents smallpox. It has afforded me my only protection. During the last four years I have been mixed with every variety of smallpox, from purpura variolosa to the mildest varioloid. I have never had smallpox, and my one safeguard has been repeated vaccination. During these four years I have been vaccinated at least fifty times, two of these vaccinations being successful. Vaccination provides immunity for varying periods of time from two to thirty years or more. Neither painful nor dangerous, and applicable at all ages, from the newborn babe to those of mature years, it should be insisted on whenever smallpox is epidemic. However seemingly perfect isolation or detention may appear, whenever smallpox is prevalent they will show themselves to be defective means of prevention.

Truly, indeed, may it be said that as regards smallpox the struggle for existence is the struggle of the vaccinated. And just as truthful is the converse proposition that the survival of the fittest is the survival of the vaccinated, in which the unvaccinated perish.

THE TREATMENT OF THE DISEASE ITSELF.

Purpura Variolosa.—No observer of smallpox has as yet published a case of the survival of a patient once

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[1] I can not agree with the authorities in the 5th volume of the XX Century Practice of Medicine on the rarity of eye symptoms Such statements as are made by Homer and Swanzey are certainly far from giving a correct opinion of these complications

John of Gaddesden, six centuries before, had used it in the treatment of an English prince, and numerous instances of its use have been recorded since. In the detention hospital at North Brothers' Island two wards were fitted up in an appropriate manner to try this form of treatment. In the Indianapolis City Hospital Detention House two wards were also fitted up to try the red-light theory.

In both of these hospitals I have had abundant opportunity to watch the effect of elaborate arrangements to try the theory of red-light treatment of the disease. With the experience of at least 300 cases I regret that I also must corroborate the results that Dr. Welch and Dr. Schamberg arrived at in Philadelphia in the two cases in which they tried the red-light treatment of the disease, and say that there is nothing in it. While it may sound well in theory, and look beautiful in practice, yet it is nevertheless true that the dead are still removed and the pitted and the scarred still recover in a red-light hospital.

In the Indianapolis Hospital suppurative fever and death have not been less in the red-light wards than in the other wards. A careful daily investigation of the patients showed conclusively that the patients under the red-light treatment have not done any better than did an equal number of patients suffering during the epidemic in four other wards exposed to sunlight and the ordinary incandescent electric light. During the time that the red light has been in use in this hospital about thirty patients have died in the red-light wards. Those from the red-light wards were as badly pitted as those from other wards.

We may conclude that the extent of scarring, pitting or pocking depends entirely on the severity of the disease and the depth to which the pustules affect and enter the true skin.

The question of the prevention of pitting is really not within the hands of the physician. It is rather that the physician and the patient should be grateful that recovery has occurred at all than that they should feel chagrin or remorse that pitting has occurred despite their earnest but useless efforts to prevent a condition which is wholly outside their power to ameliorate, to resist or to relieve.

CLINIC AT CHARITY HOSPITAL, NEW ORLEANS.

CONDUCTED BY DR. ISADORE DYER, NEW ORLEANS.

A clinic was held at the Charity Hospital, New Orleans, May 7, as a part of the program of the Section on Cutaneous Medicine and Surgery. Several cases of leprosy and other interesting skin disorders were shown and commented on by Dr. Isadore Dyer. He remarked that he made it a special point in cases of leprosy to note the effect of the disease on the face; this he believes is characteristic.

The first patient shown was a man 32 years old, who reported at the hospital first in 1897. At that time both hands and face were covered with tubercles, which were still very evident up to a year and a half ago. At the present time he is comparatively free from tubercles, though his face is scarred where they formerly existed. He has fair use of his hands, and the only actual evidence of the disease at present is in his feet. He was born in New Orleans in the district where the old leper hospital stood. Dr. Dyer remarked that whether there was any direct connection or not he is not aware; the fact is that nearly all the cases originating in New Orleans develop from that center. The patient's father was German, his mother English, and both had lived nearly all their lives in New Orleans. This emphasizes a point he had frequently remarked, that leprosy does not occur in anyone who has lived in New Orleans less than ten years. The only exception to this of which he is aware was a Norwegian, who was sent to the clinic by the U. S. Marine-Hospital Service and returned by the same boat on which he came to the city.

The treatment in the case consisted of 1/60 of a grain of strychnin with 40 drops of chaulmoogra oil, three times a day. The patient has been taking this since last December. The general condition of the skin is improved. In spite of the fact that he has advocated other lines of treatment and experimented with antivenene serum, Dr. Dyer has fallen back on chaulmoogra oil, and is inclined to agree with Bibb of Saltillo, Mexico, who says that any person who gets enough of the oil will get well, provided he has not been mutilated. The results of the Charity Hospital are in harmony with that opinion. He has two patients on chaulmoogra oil, one taking 60 drops without trouble, and a large amount of the pigmentation has disappeared from that patient's face.

Case 2 was a woman, 41 years of age, with the same disease. At first glance the diagnosis would not be clear, as there was no evidence of disease in the face. She also was of German parentage. In the reports of cases from Louisiana at the Berlin conference it was remarked that the most frequent cases were natives of Louisiana of either French or Spanish or of mixed French and Spanish parentage. This woman was born in New Orleans, in the fourth district; not the same district where the other patient was born. She has had some spots on her hands, but most are on her legs. The color has gone in a large degree. Lepers were not isolated before 1886, and the patients in the Leper Home formerly received no medical treatment. It seems a matter of conscience that patients suffering from this disease should not be merely isolated and allowed to die. Isolation is compulsory. This patient is taking only five drops of chaulmoogra oil, as that is all she can bear. The disease in her case is of five years' duration, and it is now considerably improved. She has taken the treatment regularly, but has taken the oil only in small doses.

Dr. Hopkins has charge of the treatment of the cases at the Leper Home. Out of 40 cases treated for the last year and a half two or three are nearly ready to be discharged.

The third case exhibited was a very recent one. At first glance the color is not characteristic. There is a good deal more symmetry than is usually met and the condition looks more like erythema than like leprosy. The spots are hardly marked enough for leprosy, but are all anesthetic. Those on the leg are characteristic lesions, the center being lighter. The woman says the spots on the arms and face came first. She was born in New Orleans and lived there since 1853. She lives in the third district where the old Leper Hospital was situated. The color and thickening of the skin with the anesthesia confirms the diagnosis. This case has developed within six months. Dr. Dyer referred to an error that he made before his class. A patient came in with a lesion similar to those of the patient just seen, and Dr. Dyer made a diagnosis of erythema and dismissed the case. Two weeks later he examined the patient more thoroughly and changed the diagnosis.

Cases of the tubercular type were not shown, as they go very promptly to the home. The face is usually first attacked, and it does not require that they be sent to the clinic for diagnosis. The tubercular cases are in the majority.

Beside the leprosy cases he exhibited one of cystic epithelioma. The general condition of the patient's face is better than it has been for a long time. He has had at times as many as forty and fifty tumors existing together. Most of the spots on the body have disappeared. He has been under care for more than ten years. At first it was the custom to curette the growths, but it was found that it had to be done almost weekly, and at present resorcin is being used. The interesting thing in connection with this patient is that he had an attack of erysipelas about four years ago and the epithelioma did not disappear. In private practice Dr. Dyer is using the *x*-ray in these cases with good results. In this instance the patient has had the disease for about fifteen years.

Beside these cases of herpetiform dermatitis and nevus unius lateris were shown. In the latter case the Doctor remarked he had not seen the warty type of linear nevus disappear, but the plain vesicular type he had. He has made it a rule in infants under 6 years of age not to interfere.

Another interesting case showed the effects of Unna's thiosinamin soap on a scar caused by fire. He also exhibited cases of infantile eczema which he called reflex eczema, a term for which he has fought during the last ten or twelve years. It is most common in boy children, and disappears after circumcision. If it occurs in girls regulation of the diet seems to favor its disappearance. The chief thing is to find the cause and eliminate it. then the simplest sort of treatment is effective.

Other cases of infantile syphilis, pediculosis lesions, psoriasis and chlcasma in a colored person were also exhibited.

LIMITATIONS OF NON-SURGICAL TREATMENT IN ACUTE INTESTINAL OBSTRUCTION.*

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INDIANAPOLIS.

The term "acute obstruction of the bowel," broadly used, embraces all of those conditions, however varying in their etiology and pathology, which suddenly obstruct the lumen of the intestine to the extent of interfering with the passage of its contents. It is well known that the intestine may be obstructed by omental bands, fibrous bands, the result of peritoneal adhesions, as in appendicitis or peritonitis (*ante et post operationem*), by Meckel's and other diverticula, or at the neck of an internal or external hernia; that it may become kinked or twisted as in volvulus; that one segment of the intestine may become telescoped into a neighboring segment, as in intussusception; that the lumen of the intestine may be obstructed by gallstones, enteroliths, foreign bodies or its own normal contents; that it may be narrowed by pressure of tumors from without; that its lumen may be narrowed by benign or malignant strictures, or by the pressure of neoplasms or acute swellings arising within its own walls, and by the presence of embolism or thrombosis of the arterial or venous circulation of the bowel wall. Symptoms of acute obstruction may also develop suddenly in cases of malignant, syphilitic or gonorrheal stricture.

In all of the above enumerated conditions the obstruction may be said to be purely mechanical. Cases of apparently purely functional closure of the intestine—intestinal spasm—are recorded. Heidenhain and others report a few cases of purely spastic or reflex tonic contracture. In Heidenhain's cases, the contracture seemed to be complete and irreducible. Quintard[1] collected fourteen such cases from the literature. Quintard's list is doubtless incomplete, but nevertheless cases in which complete contracture of the intestine is thus brought about by reflex irritation must be quite rare. Perhaps operation and very careful direct ocular examination in these cases would have left fewer of them recorded as of purely reflex origin. It is well known, however, that the syndrome known as ileus, as a purely reflex phenomenon, may attend or be consequent upon torsion of the pedicle of an ovarian tumor, or pinching of the spermatic cord, and that in an inorganic or functional form it may be due to ptomain poisoning or to dysentery or other inflammatory conditions in the large or small intestine. No one knows how many cases of reflex or functional interference with the procession of the intestinal contents have been included in the list of cases of mechanical intestinal obstruction cured by internal therapy.

If a surgeon, speaking from the standpoint of a limited personal experience and observation, may assume to enumerate the forms of acute obstruction of the bowel which may be cured by internal medication, the writer would include the following: First, simple coprostasis. It should be borne in mind, however, that behind the picture of simple impaction may be hidden deep strictures benign and cancerous, or compression of the colon from without by adhesion bands, etc.; second, cases of incomplete stenosis of the small intestine from chronic peritonitis. Heidenhain states that many of these cases are cured by thorough and repeated rinsing of the stomach, the use of enemata and proper dieting; third, volvulus of less than 180 dgrees when involving the colon; fourth, reflex closure of the intestinal lumen. Medical treatment of reflex ileus is not only valid, but it is our best resource. The preparations of hyoscyamus are useful agents in this form of obstruction. A single hypodermic injection of morphin may, by one brilliant stroke, efface every symptom of a violent reflex ileus, as noted by Dr. Hugo O. Pantzer of Indianapolis. It is in ileus of the reflex type alone, however, that morphin is useful, and even in cases strongly suspected of being of reflex origin, the administration of morphin or antispasmodics should not be continued too long; fifth, functional obstruction due to dysentery or other ulcerative and irritative processes, such as ptomain or lead poisoning. In such cases the cause of the ileus may usually be removed by non-surgical methods; sixth, intussusception of the colon during the early stages.

Körte has called attention to the fact that the symptoms of incarceration of gallstones are often so similar to those of a suddenly developing ileus with obstruction of the bowel, that a mistaken diagnosis of stricture or volvulus may have been made. Celiotomy is clearly indicated in such cases. Cholelithiasis is, as is well known, a surgical disease, notwithstanding it is not necessarily fatal, and is occasionally amenable to medical treatment. The ileus produced by it should be relieved by surgical removal of the cause.

No doubt in very rare cases invagination has been reduced by the forced introduction of air into the rectum, or by high colonic injections of water, but that the vast majority of these cases must be given over to the surgeon, is, or should be, well known. A volvulus of 180 degrees in the first stage of the disease may be reduced by air or water; however, in cases of volvulus reaching 250 or 300 degrees, it becomes impossible to inject water into the closed-off segment. The stenosis is complete. No one would presume to be able accurately to estimate the amount of twisting of the bowel in any given case before operation, or to specifically diagnosticate volvulus at all. As for internal stenosis due to organic stricture, it is hardly imaginable that such a case could be successfully treated by other than surgical means, and it is generally taken to be undebatably concluded that obstruction due to bands, diverticula, strangulation of herniæ and the presence of neoplasms must be dealt with surgically.

It would be obviously very difficult accurately to determine the number and character of cases spontaneously relieved or cured by non-surgical means, since after the subsidence of symptoms and cure of the patient, the abdomen not having been opened, the nature and cause of the trouble must remain in the dark. We find ourselves here on the ground of pure hypothesis. We know how difficult it is to determine the exact nature of an obstructing intestinal lesion by consideration of the external signs and subjective symptoms alone.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

[1] Murphy, Prac. Med. Series, 1901.

In cases of definitely diagnosticated mechanical obstruction of the intestine of any sort, there are few surgeons who, with instruments at hand, would adopt any less radical measure than that of operation. The non-operative methods of treatment may, under very extraordinary circumstances, be used in mechanical obstruction by one who, for various reasons, feels that he dare not open the abdomen. For one, however, with proper surgical means at his disposal, to stand by with folded hands, or deal with these cases by the so-called palliative means, requires upon his part a reckless degree of indifference indeed. The palliative means are nearly always ineffectual in cases of mechanical obstruction, are often deceptive in their effects, and are never free from danger.

Even very young children stand abdominal operations remarkably well, and there is no reason why a celiotomy, if indicated, should be withheld from an infant, even if it be only a few days old. Here the methods of inflation and injection are not devoid of danger. Knaggs reports eight instances of fatal injection. In seven of these ruptures occurred. In one case, that of a young infant, only nine ounces of water were injected when a rumbling noise was heard in the abdomen, which was immediately followed by death. (Maylard.)

It will appear to any one familiar with the anatomico-pathologic nature of the condition that the reduction of intussusception of the small intestine by the injection of water or air will hardly be possible after the onset of symptoms. It is doubtful whether in the adult it is possible to force water through the ileocecal valve. In the cadaver this may be done. Here the valve may leak, but it should be remembered that this phenomenon, though it may be demonstrated by the use of force in the cadaver, can hardly be produced in the live subject.

It must be conceded that in acute intussusception, the lesion being almost always in the small intestine, little can be gained by the injection of water. Irritating enemata may stimulate peristalsis in the lower intetine, and the movements may in some degree be transmitted to the small bowel. This will hardly suffice to release the intussuscepted small intestine if sufficient time has elapsed for the establishment of a clinical diagnosis. For by this time the intussuscepted bowel will have become quite thickened and choked, or even gangrenous. The employment of massage or taxis blindly through the abdominal coverings has never accomplished anything in any case of intussusception of which the writer has any personal knowledge. The toughness of the adhesions between the layers of the intussusceptum and the sheath or intussuscipiens and the rapidity of their development are extreme.

A few cases in which symptoms of intussusception had existed for from six to nine days have been, according to reports, relieved by the combined conservative methods. The Almighty only knows how many thousands have been lost through the employment of these so-called, but miscalled, conservative methods. Operation will conserve the lives of a certain small percentage of cases of intussusception. It represents, therefore, in the strictest sense, conservative treament. Many cases of successful excision of acute intussusceptions have been reported, and in many more cases lives have been saved by the employment of the at once less brilliant and less dangerous methods of operation.

A favorable result sometimes follows irrigation of the stomach and colonic injections of water, or insufflations of air. The physician permits himself to be deceived by the comparatively good condition of the patient, and operation is postponed until the patient is moribund, then an operation is allowed and surgery is charged with a mortality.

Successful treatment of intestinal intussusception is only possible by operation performed early, while tympanites is still slight and the patient is in relatively good general condition. Later, distension of the intestine becomes so great that often, with the abdomen opened, the most careful and zealous surgeon can not find the obstruction at all.

It would be well if there were unanimity of opinion among surgeons and physicians as to the proper treatment of a malady in which the mortality is not less than 75 per cent.

Laparotomy in such a case is always a dangerous operation, but the disease unoperated is distinctively more dangerous.

Nature has shown us the way to deal with intussusception. When, as rarely happens, she effects a cure, she does it by sloughing and gangrene and discharge of the intussuscepted segment through the bowel. It may seem quite superfluous for one to declare at this day the necessity for prompt diagnosis and prompt operation in cases of intestinal obstruction of this character. But the fact is that physicians, as a rule, are not promptly making differential diagnoses in these cases, nor operating them until the patients are *in extremis* with subnormal temperature, flickering pulse and abdomens blown out as tightly as a snare drum.

Already many successful operations for intussusception in young children are recorded. Karrsberg[2] operated on a boy 3 years and 9 months old, with invaginatio ileocecalis subchronica with complete success. Bryant[3] describes a case of acute double intussusception in a girl baby of 9 months, operated on twenty-four hours after the onset, with rapid recovery. A. B. Mitchell met a case of retrograde intussusception in a boy 4 months old. It was reduced by operation thirty-six hours after the appearance of symptoms and recovery followed. Wright and Renshaw[4] reported successful operation on a 3-year-old child with invagination of the appendix into the cecum, and Eve successfully operated on an intussusception at the ileocecum in a baby. Poppert of Giessen saved an 8-months-old child with intussusception by prompt operation, and Sells[5] also operated successfully on an infant 4 months old, 18 inches of the ileum having passed through the ileocecal valve. Several dozen similar cases have been reported. Northrup, on the other hand, reports relief of a child seven months old with intussusception by high colonic injections of water, and Ouvry[6] successfully treated a case of acute colonic invagination in a male infant 9½ months old by catheterization of the invaginated bowel.

The surgeon, however, will ask, with a shrug, whether these and other similarly palliatively treated cases were really intussusceptions. Relief in Northrup's case followed free movement of the bowels and the only indications of intussusception were a sausage-shaped tumor under the liver and bloody dejections.

Fitz's statistics give fifty-one cases treated without operation, with sixteen recoveries and thirty-five deaths (69 per cent.). Pilz reported in 1870 ninety-four cases in patients under 1 year, with a mortality of 84 per cent.

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[2] Hospitalstidende, 1896, No. 5
[3] Lancet, Oct. 12, 1901.
[4] British Medical Journal, June 12, 1897.
[5] Lancet, Aug. 31, 1901.
[6] Gaz. Hebd., June 20, 1901.

From 1870 to 1891 135 cases in patients under 1 year gave a mortality of 59 per cent.[7] More recent statistics would show a much smaller percentage of mortality after operating, as the result of earlier and more skillful surgical intervention.

A case of invagination reported by Jaboulay[8] is instructive, for the reason that no operation was made, and the autopsy showed that surgery would doubtless have saved the patient's life. The case was received into the clinic forty-eight hours after the appearance of symptoms. There was no stercoraceous vomiting. On the following day there were bloody stools. Operation was withheld because it was assumed that after seventy-two hours the vitality of the intestine must be practically lost, and, moreover, the lesion could not be accurately located. Administration of opium was followed by improvement, then the symptoms grew steadily worse. At the autopsy on the tenth day there was found a high intussusception (about 18 inches from the stomach) which was readily released by delicate traction. The intestine was in relatively good condition.

When considering operation, it often becomes a difficult matter to determine whether a given condition of ileus has been mechanically produced, or produced by peritonitis, for it is well known that the most vicious peritonitis may proceed without fever. Lejars has called attention to the fact that tubercular peritonitis may produce all the phenomena of intestinal obstruction without the slightest mechanical obstruction being present. Here the doubt should weigh in favor of operation, for since the operative treatment of peritonitis promises relatively good results, the operation is therefore specially indicated. In point it may be mentioned that Turner[9] operated on a case of obstruction due to tubercular peritonitis with prompt recovery and rapid disappearance of the peritoneal tubercles.

Volvulus or twisting of the intestine is a comparatively rare cause of obstruction. There are, in most cases, no symptoms sufficiently distinctive to admit of differentiation from obstruction due to other causes. Were it possible to diagnosticate these cases, they would in the very nature of their development and formation lend themselves rather favorably to treatment by abdominal taxis, or if in the colon, to treatment by injection or inflation. Rigorous shaking with manipulation of the abdomen, and stimulation of peristalsis by enemata may rarely untwist the involved gut. As a matter of record, however, it is rarely indeed that anything avails in severe cases except operation, and the same rules regarding early operation should apply here as apply in cases of mechanical obstruction of other forms.

The direct untwisting of the volvulus before great thickening and destructive changes have taken place in the obstructed part is often comparatively easy. A few days will place its reduction beyond the highest skill of the surgeon.

In early operation lies our greatest hope in all cases of mechanical intestinal obstruction. Naunyn collected from the literature 288 cases of operation for ileus. From the record of these cases it appears that by far the best results were obtained after operations on the first or second day after the beginning of symptoms. Results of laparotomy for intestinal obstruction in individuals suffering from hernia were particularly fortunate. These were, of course, not cases of incarcerated hernia, but cases of ileus as the result of stasis, adhesions and torsions in the neighborhood of the hernial openings.

The reason for the surprisingly good results in these hernia cases is to be sought in the fact that the operators knew where to look for the obstruction, and operated early. This fact forcibly impresses one with the value of accurate localization of the obstruction before operation, and early operating. The fact seems to stand forth in very clear light that in all diagnosticated cases of mechanical obstruction, and all cases in which there is doubt as to the nature of the obstruction, the so-called conservative methods, the administration of morphin, stomach lavage, injection and inflation of the colon are not only almost valueless, but often really dangerous. Morphin is especially treacherous. In giving it we "fall back upon the soft pillows of Providence," in most instances stultified and deceived, awaiting the messenger with the inverted torch.

In paralytic reflex ileus following abdominal operations, it must be conceded that the expectant plan of treatment is the better to follow. Unfortunately, it is not easy to distinguish this form from mechanical ileus; moreover, the former may develop into the latter. Here, again, doubt must weigh in favor of operation.

Post-operative adhesions producing obstructions must be dealt with promptly by reopening of the abdomen. In such adhesions are assumed to be present when oil and salts in generous doses fail to pass the intestine, and high colonic injections administered by one who really understands how to fill the colon with water fail to give relief.

The value of laparotomy as a purely diagnostic measure should not be underestimated. Notwithstanding Treves, Maylard and others have laid down very useful rules and precepts for differential diagnosis in intestinal obstruction, it is nevertheless very well known by those who frequently deal with these cases that the exact nature of the lesion is rarely made out before anesthesia has to some degree relaxed the abdominal wall, and usually not until the abdomen has been opened and the cavity explored.

In addition to the great number and variety of conditions which are well known as causes of intestinal obstruction, there are many which we would hardly consider as common causes of acute ileus, yet they are causes, and they are purely surgical conditions, and can be dealt with in no other way. For example, a case of obstruction due to cyst of the ileum and cecum is reported by Hochenegg, and Magnoux reports a case of invagination due to the presence of a myoma. This author collected from the literature reports of eleven cases in which this condition was caused by myoma. Morison records a case of obstruction due to polypus of the small intestine.

Neoplasms of the intestine may suddenly produce symptoms of obstruction of the bowel without previous warning. It is probable that in such cases hypertrophy of the muscularis above the obstruction compensates for the narrowing of the lumen, but with the lodgement in the constricted segment of some unusually large or hard mass of intestinal contents, an acute fulminating ileus suddenly develops. The sudden appearance of ileus does not always mean that a recent lesion is the cause.

It has been said by Treves that in ileus too much prominence must not be given to the mere circumstance that the bowel is obstructed, that to be sure obstruction of the bowel is often the prominent symptom, but not the sole basis upon which the malady depends. It can hardly be denied that the issue of a given case will depend more or less directly on the length of time during which the intestine has been obstructed, regardless of whether the intestine be strangulated or plugged with its own contents. But mere plugging will not often produce the classical condition of ileus. The bowel may be completely plugged for weeks, and the patient make a good recovery. If, however, the intestinal wall be strangulated, its circulation blocked, the symptoms immediately become urgent. Here we must think of "strangled vessels," and beginning gangrene. Unfortunately, we too often confuse these cases of strangulation with mere obstipation or impaction.

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[7] Fischer, N. Y. Med. Jour., Feb 21, 1903.

[8] Province Med., 1896, No. 5.

[9] Lancet, April 12, 1902.

It should be borne in mind that the condition of ileus with strangulation of the bowel is very rarely produced by mere plugging, and that when the symptoms of genuine ileus appear, nine times in ten the time of usefulness of the syringe and the enema is gone. I would not place a low appreciation upon the colonic douche. Its proper use requires brains and art and patience, and in no case should radical surgical means be considered until the colonic douche has been faithfully tried, but as a rule lavage of the stomach, inversion of the patient and colonic injection of oil, air and water are at best only palliative. Capillary puncture, abdominal massage and the administration of opium are perilous and reprehensible in practically all cases. With prompt diagnosticating, prompt operating and better operating the mortality will be steadily lowered.

It may be said that, as a rule, the urgency is not so great in obstruction of the large intestine as in closure of the small gut. In the former sedatives, hot stupes, taxis and enemata may be justly employed for a longer time than in the latter.

To some it might seem unnecessary to urge the necessity for early operation in cases of intestinal obstruction with ominous symptoms. This excludes mere obstipation, for the reason that impaction *per se* does not produce severe symptoms, as before observed, but physicians, for the most part, are for some reason not recognizing intestinal strangulation promptly enough, except it be consequent upon sudden descent of a hernia, and are not promptly advising operation.

It is a dangerous surgeon who counsels operation merely for the sake of operating, and who would operate in a "stable with a pocket knife," but he who bears the name of surgeon, and who is adequately equipped, and can provide a reasonably aseptic environment, but who stands by with folded hands, resigning these cases to Providence and the rectal douche, is ten times more dangerous. The surgeon who does not realize the limitations of his art is a dangerous man indeed, and he who is not aware of its possibilities is useless. But no man is more dangerous nor more useless in his community than the physician who would cling to a case of mechanical strangulating intestinal obstruction which he has been unable to accurately diagnosticate, and which he has not the facilities nor the intrepidity to treat in the only way which avails, that is by operation.

Abuse of the Medical School at Zurich in a Novel.—A Swiss authoress has written a novel which claims to portray the life of a medical student at Zurich. It is abusive in tone and has aroused much indignation. Professor Krönlein has written to the daily press explaining away the misconceptions, and a mass meeting of the students was held to protest against the statements in the book. The writer was a student in the literary course at the university. Her novel has been widely advertised by the protests, which is perhaps what she intended.

BACILLARY DYSENTERY (SHIGA).*

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GENERAL REMARKS.

Dysentery has been, from the earliest times, a disease of great importance, and especially has this been the case in the tropics and in the camps of great armies in the field. My own impression, gained from something over two years' service in the tropics, is that intestinal disorders far outnumber all other diseases, and that of these, dysentery is of overshadowing importance, both on account of its high rate of mortality, and because of the invaliding which results from it.

In the medical history of the War of the Rebellion something over 259,000 cases of acute dysentery and 28,000 cases of the chronic type are reported to have occurred in the Federal Army alone; and, again, during the Spanish-American War the same disease played havoc among our troops in Cuba, Porto Rico and the Philippines; in the South African campaign it was also widely prevalent.

In the tropics it is endemic at all times, and its importance may be gathered from the observations of Strong that of 1,830 cases in soldiers admitted to one hospital in Manila in sixteen months, only one-third were returned from there to military duty, and that the deaths from dysentery in the Army in the Philippines were nearly four times as great as from any other single disease.

For many years an epidemic form of bacillary dysentery has prevailed in Japan in the late summer and fall; in 1899, there were some 130,000 cases, with more than 26,000 deaths.

The disease occurs all over the world, increasing in frequency and importance the nearer we approach the tropics. In the temperate zone it occurs sporadically, at times assuming an epidemic form, which, even in cold climates, may be widespread and fatal; and this is especially apt to be the case in institutions such as insane asylums, or other places where there is overcrowding and bad hygienic conditions. Dysentery is especially a disease of the late summer and autumn, and in the tropics is most prevalent toward the end of the rainy season, though it occurs at all seasons. Age and sex have apparently no other influence than that resulting from the greater exposure incident to the life of the male adult.

ETIOLOGY.

The dysenteries have been variously classified on epidemiologic, clinical and pathologic-anatomic grounds, and the varieties described by different authorities have been as numerous as their points of view.

On the one hand, some writers believe in the essential unity of all the dysenteries, while on the other it has been held that many forms of bacteria and several varieties of amebæ were each responsible for a particular form of the disease. Since the discovery by Losch, in 1875, of amebæ in the stools of dysenteric patients, these organisms have been regarded as the cause of tropical dysentery by many authorities. Between that date and 1897 nearly all the varieties of intestinal flora have been accused of being the causative agents of dysentery; but it was not until the latter year that Shiga, studying an epidemic of acute dysentery in Japan, was able to demonstrate the constant presence, in the intestinal discharges and in the inflamed mucous membranes, of bacilli which were not found in the intestinal tract of healthy subjects or in those suffering from other diseases, and using the agglutination test of Widal, announced the year before . proved that the blood serum from his dysenteric cases gave the specific agglutination with the newly-isolated bacillus.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

Flexner, in 1900, found the same bacillus in dysenteric stools in Manila, but was not satisfied that it was a specific organism. Later in the same year Strong and Musgrave confirmed his findings, and expressed their belief in the specific character of the organism. Since then the same bacillus has been isolated from dysenteric stools by Krause in Germany, Flexner and Duval and Vedder in the United States, Deycke in Turkey, Frosch v. Drigalski and Conradi in Prussia in the dysentery supposed to have been brought from China during the recent war, and by Foulerton among the English troops from South Africa. Still more recently Duval and Bassett have isolated the same bacillus from the stools in the summer diarrhea of infants.

It thus seems to be established that there are, etiologically, at least, two distinct types of dysentery, one ordinarily acute and due to the *Bacillus dysenteriæ* of Shiga, and the other usually chronic without the Shiga bacillus in the stools, and due to the ameba dysenteriæ. To the bacillary types belong the epidemic dysenteries, and the sporadic dysenteries of temperate climates, as well as the summer diarrheas of infancy.

Bacillary dysentery, then, is an acute infectious disease due to the *Bacillus dysenteriæ.* It is characterized clinically by frequent loose passages containing blood and mucus, by pain in the abdomen, tenesmus, and more or less fever.

Anatomically, there is catarrhal inflammation, fibrinous exudation, coagulation necrosis, and finally, ulceration. The inflammation affects chiefly the large intestine, but sometimes the lower end of the ileum is involved as well.

THE BACILLUS DYSENTERIÆ.

These bacilli are small rods with rounded ends, resembling the typhoid and colon organisms. They are slightly motile, flagellated, stain with ordinary dyes, decolorize with Gram, and do not liquefy gelatin. Their resisting power is slight, being readily killed by weak antiseptic solutions, and by an exposure of half an hour to sunlight.

The bacillus is not readily found in the evacuations for the first few days nor in the subacute and chronic stages, but by the end of the first week it is found abundantly in the blood and mucus discharges. Toward the end of the attack it disappears to reappear in relapses.

In the intestines it is found in the fresh exudate and in the deeper layers of the ulcers. It is also found in the mesenteric glands, but never elsewhere.

The blood of dysenteric patients agglutinates the *Bacillus dysenteriæ* in dilutions of 1 to 20 to 1 to 130, depending on the severity of the case and the stage of the disease. According to Shiga, this alone is not sufficient evidence, and to be positive the agglutination should progressively increase in intensity. Agglutination appears, according to Strong, as early as the third day, and is usually marked by the fifth or sixth day; but, according to Shiga, it is not positive until the second or third week, and is not therefore, of great importance in diagnosis. It has been found as late as eight months after recovery.

The value of the bacillary diagnosis is lessened by the fact that the bacilli can not often be found in the early stages or in the mild cases, but when the morbid process is low down in the colon or in the rectum, they can generally be found without difficulty. Agar plates are made in the usual manner, and after twenty-four hours' incubation the colonies are examined, and those which are least developed and most transparent are tested as follows:

1. Agglutinating capability with immune serum.
2. Cultivation upon glucose-agar.
3. Cultivation in milk.

If the agglutination reaction is positive, no gas is produced, and milk is not coagulated, the microorganism is *B. dysenteriæ.*

Shiga gives the following proofs that his bacillus is the specific cause of dysentery:

1. It is present in all cases.
2. It is never found in other diseases or in healthy persons.
3. Its presence in the stools corresponds in degree with the intensity of the morbid process.
4. It is found in the lesions in the intestinal wall.
5. It, or its toxins, cause intestinal hemorrhage.
6. It is agglutinated only by the blood of dysenteric patients.
7. The agglutinating power of the blood increases in intensity with convalescence.
8. Pfeiffer's reaction is marked.
9. Immune serum is of therapeutic and prophylactic value.
10. The *infection of man:* this occurred in one case where a pure culture was intentionally given to a condemned criminal, and in another where a culture was accidentally drawn into the mouth. There have also been at least two other cases of accidental laboratory infection.

PATHOLOGIC ANATOMY.

The lesions are those of a catarrhal, diphtheritic and sometimes hemorrhagic inflammation of a part or the whole of the large intestine, and occasionally of the lower portion of the small intestine.

The inflammation is most marked opposite the flexures of the colon because of the tendency of fecal masses to lodge there and set up inflammation through irritation. The changes begin in the mucosa and extend to the deeper parts, in contradistinction to those of the amebic type, where they are most marked in the submucosa. There is extensive coagulation necrosis; but, according to Strong, few or no real ulcers. Shiga, in Japan, reports the colon as riddled with small, shallow, clean-cut ulcers. The anatomic picture, however, is very different from that of amebic dysentery, with its large, ragged ulcers and undermined edges, not infrequently resulting in perforation. The submucosa is much thickened and infiltrated, the peritoneal coat is sometimes inflamed, and occasionally there are adhesions and hemorrhagic spots. Perforation seldom or never occurs. In the superficial layers of the inflamed region all sorts of bacilli and cocci are found; but in the deeper layers and in the adjacent inflamed and swollen mesocolic glands the *Bacillus dysenteriæ* is found in pure cultures.

When the small intestine is involved the changes are the same as in the colon, except there is not so much thickening of the submucosa.

The liver and spleen are not involved, while in the amebic type liver abscess is common.

MODE OF CONVEYANCE.

The disease does not appear to be directly contagious. The bacillus must be taken into the mouth, and this is accomplished ordinarily through the medium of infected drinking water. It may occur through infected milk or uncooked foods, and it is possible that it occurs from contamination by the dust from infected soil, and may be carried by flies in the same manner as in typhoid fever.

Intestinal disorders, indigestion, improper food, exposure to cold and wet, starvation, overcrowding, and, indeed, all bad hygienic conditions are strong predisposing causes.

CLINICAL HISTORY.

General Description.—The incubation period is very short, usually not more than two or three days, while in one case where a pure culture was intentionally swallowed, dysentery resulted within twenty-four hours. In another instance where a small quantity of a liquid culture was accidentally drawn into the mouth, the same result followed in less than forty-eight hours. In still another case where infection was supposed to have occurred through the rectum from the use of an infected chamber, the incubation period was twenty-four hours.

Ordinarily, the disease comes on suddenly. Often the patient goes to bed well and wakes up in the night with pain in the abdomen, followed by diarrhea, the movements becoming more and more frequent, until they consist almost or entirely of blood and mucus. The number of movements varies from a dozen to fifty or more, and may be over a hundred in the twenty-four hours. There is more or less fever, intense thirst, much restlessness, coated tongue, straining at stool, and finally the movements become almost constant and involuntary. The swollen and infiltrated intestine can often be felt through the abdominal wall, and is very tender on pressure.

The disease is ordinarily of short duration, not more than ten days or two weeks. Before the end of the second week many cases will have terminated in death or convalescence, or the disease may gradually assume a chronic type.

Special Features.—The mode of onset is almost always sudden. The facial aspect in the early stages is anxious and expressive of suffering; toward the end it becomes apathetic. Fever is generally present, of irregular type and variable in amount, often reaching 103 F. to 104 F.; toward the end there may be a sudden fall to subnormal, a very unfavorable sign, or there may be a sudden rise. Rigors are rare. The skin at first is hot and dry, but toward the end it may be cold and clammy.

The pulse is rapid and often small and weak; death usually results from cardiac exhaustion.

The tongue is coated white, and at first is moist, but later becomes dry and glazed. Vomiting is unusual, though it does occur. Thirst is usually marked and persistent. The stools, at first diarrheal, soon consist of mucus and blood only; in the chronic stages there is an admixture of pus. Hemorrhage is rare, but does occur.

Abdominal pain is commonly marked, and there is tenderness over the seat of the lesions in the colon. The spleen and liver are not ordinarily enlarged or tender.

The blood changes are not very important. The white corpuscles, especially the polymorphonuclears, are usually moderately increased, though they may be diminished, especially in the fatal cases. The red corpuscles, at first increased through the loss of fluids by the bowels, are later diminished on account of the loss of blood in the stools.

Pulmonary complications may occur, especially broncho-pneumonia. The nervous system is not markedly affected unless the lesions are high up in the colon or in the small intestine; delirium may occur toward the end of fatal cases.

The urine is often diminished in amount and retention occurs. Sometimes there is a small amount of albumen, and occasionally there is an acute nephritis. Parotitis is an infrequent complication.

Shiga states that the general symptoms are due to the absorption of the products of the solution of the bacilli themselves, and not to toxins produced by them; that these symptoms are not so marked as in typhoid fever is due to the location of the lesions in the less readily absorbing large intestine. Sometimes the lesions are higher up in the small intestine, and then the disease is much more grave and the toxemia marked. Symptoms such as high fever, headache, pains all over the body, sleeplessness, stupor, delirium, ecchymoses, etc., appear, and when the rectum is much involved, tenesmus is marked. The disease has a constant tendency to ascend, and the higher up the lesions the more marked the toxemia, the larger the stools and the greater the gravity of the case.

ASSOCIATION WITH OTHER DISEASES.

The older writers, particularly Manson, seemed to think that the disease is often associated with malaria; but this view is opposed by Strong as a result of his experience in the Philippines.

There have been, however, a number of cases of double infection with the ameba and with the Shiga bacillus.

There are two types, or rather stages, of the disease; the acute form or ordinary epidemic dysentery of the tropics and temperate zones, and the subacute or chronic stages following the acute.

DIAGNOSIS.

Local rectal troubles causing blood and mucus discharges, such as hemorrhoids, polypus, malignant disease, etc., are to be excluded by direct examination. The most important differentiation is that from amebic dysentery, and this is often not possible from a consideration of the general symptoms alone. The most important points are the sudden and severe onset, the rapid course, high mortality, and epidemic occurrence of the Shiga dysentery, as contrasted with the more gradual and milder onset and course of the amebic disease and the endemic prevalence of the latter. The amebic type is, however, sometimes acute in its onset. Liver abscess seldom or never occurs in the bacillary disease, while it is common in the amebic form. In amebic dysentery, except when complicated with liver abscess, toxic symptoms, such as fever, malaise, headache, anorexia and nervous symptoms, seldom occur.

The specific tests are the only reliable ones; the isolation of the bacilli from the stools and the agglutination tests for the Shiga organism, and the finding of the ameba in the stools in the amebic type. The bacilli are found in the stools in all severe cases of Shiga's dysentery as early as the end of the first week in the acute stages, and sometimes in pure cultures. They may not be found in the later stages, and they are never present in the intestinal tract of healthy persons.

PROGNOSIS.

This depends on the severity of the epidemic and extent of the lesions. If the rectum and sigmoid flexure only are involved, the prognosis is favorable, while if the whole large intestine, and especially a portion of the small intestine is involved, it is very unfavorable. Nervous and other toxemic symptoms indicate such involvement, and are hence unfavorable signs. Failure of the agglutination reaction to increase in intensity is also a bad omen.

The disease is always a grave one, the mortality ranging in the Japanese epidemics from 30 to 40 per cent. Recovery is rare in the more severe cases, and death usually occurs in the first ten days. Those who do recover are left very much weakened and emaciated, but usually without the digestive disturbances which so often follow amebic dysentery.

PROPHYLAXIS.

In the treatment the same precautions to prevent extension of the disease are required, as in typhoid fever; the most important of these consists in thorough disinfection of the discharges from the bowels and everything liable to have been contaminated by them, including the hands of attendants and instruments and appliances used about the patient. Personal prophylaxis includes also the use of water that has been sterilized and the avoidance of uncooked fruit and vegetables. The disease is a preventable one, and with military commands it should be prevented whenever it is possible to control the water and food supply of the men.

TREATMENT.

In the acute form the first essential is absolute rest in bed, with sufficient covering to protect from cold and draughts. Diet is also of the utmost importance, and should be exclusively liquid, and of such a nature as to be completely digested in the stomach. Milk is the best food, and may be given plain, peptonized or diluted with carbonated water or lime water; in the form of koumyss it is also well borne. All drinks should be tepid or warm, and given in small quantities at a time, and at frequent intervals. When milk is seriously objected to or can not be borne, strong broths of beef, mutton or chicken may be used; albumin water is of value in very severe cases. Stimulants may be given if needed, and the best is good brandy in the form of milk punch, or an occasional egg-nog.

The success which has been attained in Japan with the specific serum treatment instituted by Shiga gives that method the first rank in the consideration of therapeutic agents. Having had no experience with the method myself, I quote from Shiga's own article in the Twentieth Century Practice:

> #### IMMUNIZATION OF HORSES AGAINST DYSENTERY.
>
> An agar culture of the *B. dysenteriæ* which has been maintained at the incubator temperature for twenty-four hours is emulsified in normal saline solution and heated at 60 C. for one-half an hour. This mixture is then inoculated subcutaneously into horses in the usual manner, beginning with small doses which are gradually increased in amount. The immunization can be more easily produced if immune serum is added to the emulsion of the dysenteric bacilli, because abscesses which reduce the vitality of the animal are often produced at the site of the inoculation when bacilli alone are employed.
>
> #### PRACTICAL SERUM TREATMENT.
>
> Dysenteric serum, like typhoid serum, is bactericidal, but in practice the former gives much better results than the latter. According to my opinion, this is due to the localization of the lesions and the toxic symptoms. In dysentery, the lesions are usually localized in the rectum and lower portion of the large intestine, whose physiologic function is principally mechanical, and where absorption of the food does not take place as in the small intestine. The toxic symptoms are intimately connected with this localization, against which bactericidal serum is valueless. Such symptoms in dysentery are happily less prominent than in typhoid fever. This is the chief reason for the favorable influence of dysenteric serum. This conception also accounts for the very unprofitable prognosis in enterodysentery.
>
> #### RULES FOR ADMINISTRATION.
>
> In accordance with my researches I have formulated the following rules for the administration of dysenteric serum for use in the Institute for Infectious Diseases in Tokyo:
>
> 1. In mild cases the serum is inoculated once in a dose of 6 to 10 c.c.
> 2. In cases of medium severity the serum is twice inoculated in doses of 10 c.c. The interval is from six to ten hours.
> 3. In severe cases the greatest quantities of serum are inoculated (about 60 c.c.). The daily dose does not, however, exceed 20 c.c.
>
> By serum treatment the disease in its first stages is quickly cured or remarkably ameliorated. In advanced or inflammatory stages the effects produced are about as follows: The number of stools is markedly diminished (generally reduced by halves for three successive days, followed by rapid recovery), the tormina and tenesmus decrease, the blood in the stools diminishes or entirely vanishes, the abdominal pains lessen, the fever vanishes, the appetite increases, and the general condition is much improved. In the ulcerative stages the action of the serum is not so pronounced as in the earlier stages, nevertheless healing of the ulcers with cicatrization often takes place. In such cases the fever is reduced, the number of stools is markedly diminished, the general condition is improved, and the appetite increases. In this stage even the results obtained are far better than those given by any other method of treatment.
>
> By the serum treatment the course of the disease is shortened in those who recover, and lengthened in those who die. Of the 510 cases which I have treated (298 with serum and 212 with drugs) the entire course (counting from the beginning of the sickness to the discharge from the hospital) was on the average as follows:
>
> | | Recovered. | Died. |
> |---|---|---|
> | Serum treatment | 25 days. | 16 days. |
> | Symptomatic treatment | 40 days. | 11 days. |
>
> The mortality of dysentery varies according to the climate, the epidemic, etc.; in order to estimate properly the value of the serum treatment I will here record the mortality in hospital treatment.
>
> The mortality by the use of the serum treatment was reduced one-third below that given by symptomatic treatment, and was less than one-half the minimum obtained by such treatment.

MORTALITY IN HOSPITAL TREATMENT.

Year.	Place.	Treatment.	Number of Cases.	Deaths.	Percentage of Deaths.
1895	City Hospital	Symptomatic.	38	22	55.0
1896	City Hospital I.	"	221	86	39.0
1896	City Hospital II.	"	6	2	33.3
1897	City Hospital I.	"	336	143	42.4
1897	City Hospital II.	"	4	1	25.0
1897	City Hospital III.	"	767	304	39.6
1897	Inst. for Infec. Dis.	"	34	8	23.5
1898	City Hospital I.	"	178	73	42.0
1898	City Hospital II.	"	385	141	36.6
1895	Inst. for Infec. Dis.	Serum.	65	6	9.2
1899	City Hospital I.	Symptomatic.	98	32	32.6
1899	City Hospital II.	Serum.	88	11	12.5
1899	City Hospital III.	Symptomatic.	481	105	22.0
1899	Inst. for Infec. Dis.	Serum.	105	5	8.5
1900	Inst. for Infec. Dis.	"	40	5	12.5

Certainly this is a showing which encourages us to give the serum treatment a careful and extended trial. But Shiga says:

> Whether or not serum-therapy is employed, suitable cathartics and enemata should always be administered, since these tend to limit the upward extension of the disease. For this purpose I generally order 0.5 grams of calomel, to be given twice, or 10 to 15 c.c. of castor oil, which is to be given but once. Thereafter, enemata of 1 per cent. saline or soda solution should be given once or twice daily. Combined with the serum treatment I generally order acid or alkaline drinks or red wine.

MEDICAL TREATMENT.

This may be considered under two headings, antiseptic and eliminative treatment. Of antiseptics, those usually employed are calomel, bichlorid of mercury and salol. All these have been highly praised and extensively used, but with the exception of calomel, which at times is very useful as an eliminative agent, it is doubtful if any of them have real value.

The most important eliminative agents used are the saline laxatives, especially the sulphates of soda and magnesia; ipecac in large doses is also highly recommended.

These remedies act first by emptying the bowels of all irritating fecal matter and then mechanically flushing them out, sweeping out at the same time many of the bacilli and their toxins.

Some physicians use the salines in large doses and only at the beginning of the disease, while others use small doses frequently repeated until blood and mucus disappear from the stools.

The ipecac treatment is very popular with the British, more especially in the British Indian service, but it has never gained much of a foothold among the profession either here or in our tropical possessions. In this method no food is given for several hours, then a mustard plaster is applied to the epigastrium and twenty or thirty drops of laudanum given by the mouth; half an hour after the laudanum two grams of ipecac are given in bolus or capsule, and the patient kept perfectly quiet with head low. If the medicine is rejected by vomiting it is repeated after an hour or two; if it is retained it is nevertheless repeated after eight, ten or twelve hours, according to the effect produced, the object being to secure a feculent movement free from blood and mucus.

My own plan, as a result of experience gained in the tropics and the southern states, is to give 10 grams of Epsom salts in half a glassful of water every hour until a movement is obtained free from blood and mucus. This method is combined with irrigation of the lower bowel with warm normal saline two or three times a day, and as soon as the movements assume an ordinary diarrheal character astringents, such as bismuth subgallate in large doses, combined perhaps with a little Dover's powder, are given every three or four hours; should blood and mucus reappear, the saline flushing is repeated. The lower down in the bowel the lesions are seated the more important becomes the local treatment by irrigation.

In convalescence great care is required in the management of the diet. These patients are usually greatly weakened and emaciated, and a slight indiscretion in regard to food will often cause a serious relapse. Only liquids or very soft and digestible solids should be used for some time after the movements become normal. A change of climate or a sea voyage greatly hastens recovery, and for patients in the tropics is often essential.

TREATMENT OF THE SUBACUTE AND CHRONIC STAGES.

In the subacute and chronic stages of the disease the treatment is somewhat different, but even here salines may often be used with advantage in the beginning. Local treatment is, however, of the first importance in these cases; the patient should be given an anesthetic, the sphincter well stretched, and the rectum carefully examined with the speculum to detect ulcers. These ulcers will often be found with a little pocket at the lower end in which fecal or other foreign matter lodges, keeping up the irritation. These pouches must be slit up to the bottom, scraped with the curette, or touched with pure carbolic acid or lunar caustic; after this the use of warm saline injections two or three times a day with proper diet suffices to effect a cure. When the lesions are higher up nitrate of silver injections, 1 to 500 or 250, are given every day or every other day; the injections should be large, two or three pints, warm, and given slowly through a tube introduced 12 or 15 inches; the patient should be in the left lateral position with the hips raised. Internally, large doses of dermatol are useful in these cases.

MALARIAL DYSENTERY.*

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One has but to review the literature of dysentery to arrive at the conclusion that there is no fixed etiologic factor in this disease; that the lesions, which are mainly confined to the large intestine, are quite characteristic, but are induced by several different agents, is a pretty constant finding, and is worthy of consideration.

The *Amœba coli* is designated as the specific causative factor of dysentery, but here one is confronted with the fact that these bodies are found in less than one-half of the cases of all varieties and stages of the disease, and that the colon may be the normal habitat of amebæ, not only of this, but other amebæ—*Amœba guttula, diaphana, vermicularis, oblonga, reticularis and proteus*—which, it may be, are quite as culpable as *Amœba coli*. Moreover, these bodies are usually accompanied by other organisms, some pathogenic, and others which, by the proper environment, may be made pathogenic. Again, injections of amebic stools into the bowels of laboratory animals have not produced dysentery, and on the other hand, ameba-free stools injected in like manner have produced the flux. *Amœba coli* occurs nearly constantly in the pus of about half of the cases of liver abscess from dysentery; bearing out the contention of Councilman and Lafleur that amebæ are found, not alone in the pus and on the walls of intestinal ulcers, but in the tissues around them, they could not, therefore, reach the liver without some such portals of entry. I quite agree that the *Amœba coli* is one of the agents in the etiology of dysentery.

The work of Shiga, Flexner and others have given the profession a ray of hope looking to the minimizing of the agents of this great scourge, but up to the present we are only able to say that there are "forms of dysentery," under which heading "several diseases unlike in their etiology and pathologic anatomy and, occurring under different conditions of climate and locality, although resembling each other to some extent in their symptoms." Thus we have dysenteric and diarrheal symptoms accompanying typhoid infection, pneumonia, bronchitis, hepatitis, abscess of the liver, etc.

Celli and Fiocca believe that the *Bacterium coli communis* is the etiologic factor in dysentery; this in connection with a bacillus resembling the typhoid bacillus and streptococci induce dysentery. Flexner has observed in the Philadelphia Hospital one case of dysentery, where the *Bacillus dysenteriæ* was found, and states that further observations are necessary to determine definitely whether this form of disease prevails in this country.

In short, it seems the part of wisdom to admit that in so far as there is a distinct, definite causative factor in the production of the fluxes, we are largely in doubt.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

Thus, desultorily, I am lead to the subject of this paper. I could not better begin than by quoting from Manson: "In respect to geographic distribution and certain epidemiologic points, tropical dysentery bears a close resemblance to malaria. Like malaria, although dysentery is found in temperate climates, in them it is, with exceptions, a comparatively rare and mild affection. Like malaria, as we approach the Equator dysentery tends to become more common, and in type more severe. Like malaria, it is endemic in certain spots, where it often appears in sporadic form, and, at times, in limited local epidemics. Like malaria, it may extend beyond these endemic spots and involve more extensive tracts of country. Like malaria, it appears to have a predilection for low-lying damp places; and, like malaria, when occurring in temperate climates it is most prevalent in the late summer, or in early autumn. Like malaria, it tends to disappear on the cultivation and drainage and improved sanitation of a country."

In looking over the "Medical and Surgical History of the War of the Rebellion," I have been struck by the apparent accurateness of the observations of the medical officers on the "Pathologic Anatomy and Pathology of Malarial Disease," and the deductions drawn therefrom, measured by the present-day knowledge of the pathologic conditions brought about by the malarial parasite.

The postmortem notes, so far as required for our subject, are as follows:

Stomach.—In 21 of the cases the condition of the stomach is not stated; it was normal in 5 and constricted in 1. In 13 cases a morbid condition was specified thus: In 4 the organ contained a green-grumous or mud-like liquid; in 3 its mucous membrane was congested; in 1 softened; in 1 slate-colored; in 1 thickened, and in 4 ecchymosed.

Intestinal Canal.—In 6 of the 40 cases the intestines were reported healthy; in 9 their condition was not stated. In 13 of the remaining 25 cases the large and small intestines, so far as can be ascertained from the phraseology of the reports, were both affected. Five of the cases were much congested or inflamed, but not ulcerated; in the first-mentioned, for instance, the canal was almost black from the engorged condition of the capillaries, and coagulated blood was found in its interior. In 1 of the 13 cases the mucous membrane was softened, and in 7 ulcerated; in 2 of the latter the duodenum alone was ulcerated, although the canal was generally highly congested; in 1 the ulcerations were reported as slight; in 1 as old; in 1 as large and in 1 as small, and in 1 as associated with a congested condition of the mucous membrane. In 6 of the 25 cases the condition of the small and large intestines is specifically stated: In 1 both were inflamed, but the patches of Peyer were not diseased; in 1 both were much congested and ecchymosed; in 2 deposits of black pigment were found in the large intestine, while the ileum in 1 was but slightly congested, and in the other merely stained with bile; on the other hand, the patches of Peyer in 1 presented the pigmented appearance, while the rectum was ulcerated; in 1 the mucous membrane of the ileum was softened and thickened, that of the colon congested. In the remaining 6 of the 25 cases the small intestine or ileum only was affected. In 3 it was congested, in one of which the patches of Peyer and the solitary glands were enlarged; in 1 it was ulcerated; in 1 congested to a purple color, which presented a deeper tint in the apices of the solitary glands, although the patches of Peyer were unaffected; in 1 also there was a deeply colored congestion which was especially marked throughout the jejunum.

I might quote the parallel observations of Maillot and of Laveran on the incidence of dysentery in malaria among the French troops; many others have contributed thoughts along this line. Craig, in his book on Estivo-Autumnal Malaria, leans very pronouncedly to the plasmodium as a causative factor in diarrhea and dysentery.

I have seen many, many times cases of dysentery respond promptly to quinin treatment. I am not now possessed of the case notes in these cases, but I remember well to have had a small epidemic of dysentery, each case of which began with the algid form of pernicious malaria. These were not merely of the catarrhal character, but there was "chopped meat" discharges, evidence of some sloughing. All of these cases—about 12 in number—responded to ordinary antiseptic irrigations, gland arousement and quinin in a week or less. Convalescence rapid.

Lastly, malarial parasites have been found not infrequently in the vessels of the mucosa and submucosa in cases of malarial dysentery coming to necropsy.

Note.—The discussion on the symposium including the papers of Drs. Mason and Burns will follow later.

TRAUMATIC PNEUMONIA.*

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The compound term "traumatic pneumonia" implies association of injury with disease. Its ample interpretation concerns alike surgical and medical science. The Greek word "trauma" is very near to that of the English word "injury," both as to use and significance. Pneumonia is a medical appellation given a disease involving the presence of specific germs, and various changes in the air vesicles, parenchyma and associated structures of the lungs. "Pneumonitis" and "inflammation of the lungs," formerly used to designate this malady, have given place to the more liberal term "pneumonia." The use of the latter designation does not commit us to any theory as yet in dispute, and is in harmony with empiric evidences, as well as bacteriologic demonstrations of the present. Under whatsoever garb or name, and whether recorded in the chaos of lapsed eons or mingling with the dust and tumult of twentieth century activity, pneumonia has been and continues to be the assassin of human comfort, health, life and medical theory. Its autobiography is written in signs and symbols so legible that "he who runs may read," without betraying its origin or end. It shows no respect for time, place, age, sex or condition. Now it may be individualistic, again communistic, and anon socialistic. The frontier medical man "sees it in the clouds and hears it in the wind." The bacteriologist, confused by its multo-coloring, announces it an emanation from pleural sources.

Trauma is one causative agency in the awakening of pneumonia not yet accorded full recognition as a medical or surgical entity, which appeals to the consciousness of the physician of this age as never before. The importance of the subject augments with every step of human advance involving the utilization of energies and mechanical inventions unknown to our forefathers.

With "traumatic pneumonia" the profession is not as familiar as it should be, neither is it equipped with ample literature from those who have been the awed but mute witnesses of its consequences.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

Surgical science, as displayed in the war between the north and south, hinted at the subject, and the immortal Hamilton observed that "The shock produced by a musket ball is sufficient to cause a rupture of some of the more superficial pulmonary vessels, and in other cases it gives rise eventually to pleuritis, or even pneumonia." He further says "a missile may impinge upon the thorax and without causing rupture of the skin or anything more than a slight abrasion, may fracture the rib, rupture the lungs, or some of the large blood vessels, or even tear open the heart itself."

Reidinger gave the name of "concussion of the chest," or commotio thoracica, to a series of cases of this character, but produced in various ways which were remarkable for their fatalities.

Litten, a more recent and copious writer upon the subject, recognizes the large influence of trauma upon the occurrence of pneumonia, and concludes that, "lobar, croupous (or fibrinous) pneumonia may arise as a sequel to violence upon the thorax, where no external signs appear." In his terminology he uses the name "traumatic pneumonia" for those cases following penetrating wounds in the lungs, and reserves the term "contusion pneumonia" for those resulting from external force producing concussion of the lungs.

Rezerot notes that "the results of injury may show pneumonia, localized spots of catarrhal pneumonia, and even interstitial thickening of the lungs."

Stephen Paget, a most reliable and capable observer and author, expresses himself thus: "We are tempted to make light of a general injury of the chest, unaccompanied by fracture, or by a serious wound of the soft tissues. But apart from the fact that very grave and even fatal results may follow a blow or a bruise over the chest, which seemed in itself insignificant, general injuries of the chest are sometimes attended by changes so unexpected and so obscure that they need careful consideration." In conclusion, he adds: "We are bound, therefore, not to think lightly of contusions of the chest merely because there is no fracture or external wound."

Pirogoff is authority for the statement that "such injuries are at least as dangerous as penetrating wounds."

Stern, who has made a special study of pneumonias from all causes, places the statistics of those produced by trauma at 4.4 per cent.

From all this we must infer the importance of the subject presented, and be also impressed with the necessity for careful inquiry into the causal factors in all classes of pneumonia, and especially those preceded by injury, no matter how trivial the objective evidences of trauma may appear. We must not forget that accident and fright may be factors in the production of traumatic pneumonia. Some recent authorities claim that fright is the first element of danger, although manifestly greater in some than in others. In our study of the factors contributing to the occurrence of traumatic pneumonia, we need not prove faithless to the theory associating the disease with the diplococcus, as it is a fact that the micro-organisms are present in the expectorations of those suffering from traumatic pneumonia.

The purpose of this paper is the consideration of those cases of traumatic pneumonia which appear from contusions, and, as far as possible, refrain from mention of those due to penetrating injuries of the lungs, or those including fractures of the bones or cartilages.

The question arises, "how is it possible for a jar or force expended upon the external surface of the yielding thorax to be so transmitted as to do violence to the contained viscera, and especially the elastic lungs?" We may understand why the delicate tissues of the brain may be injured by slight concussion, even by contrecoup or force upon the lower end of the spine, but we are naturally inquisitive about like possibilities in the lungs. The normal elasticity of the chest, in the majority of cases, is capable of rendering *nil* the accidental forces which antagonize it. The extremely young will resist a crushing weight, as that of the wheels of a wagon, to which the mature thorax would yield. However, a stroke of 100 to 300 pounds, carrying with it past the point of contact upon the chest all of the force not antagonized by the resistance offered, will cause the elastic walls to impinge upon the lungs with dangerous results, corresponding to the degree of thoracic elasticity. It would be more to the pulmonary disadvantage if the lungs were surprised by accident during full inspiration than if occurring at the end of expiration. Unfortunately, the former is the attitude of the lungs at the instant when the largest number of injuries are received. Fright is associated with 90 per cent. of chest injuries. In more than half of these fright prompts a gulp of air, closure of the glottis, rigidity of the diaphragm and other muscles of respiration and a fixidity of the thorax. There is also an attempt to free the arms, as in the attitude of self-defense. The chest is never guarded in this pose, instinctively responsive to the primal law of nature—self-preservation. Fright has not time for appeals to the ideational centers. The frightened human "holds his breath," and a stroke or fall on the chest is often received in the position of pulmonary disadvantage. To this condition of the chest is often added an advantageous angle for the force because of the unfortunate position assumed by the individual.

Hamilton describes the mechanism of force thus: "The ribs with their cartilages are bent inward violently and made to encroach very far upon the contained viscera, and serious lesions may be produced before the bony parietes are fractured."

Thus far we have considered normal conditions of the thorax and lungs, and the inference is that the force required to produce injury to the lungs varies with the age, elasticity of the chest, position of the lungs in the respiratory act, the exact angle at which the stroke may be received, and the individual factors.

It must be remembered that if a blow impinges upon the chest walls it is distributed to adjacent structures much as the sound waves in the air, amplifying and making greater impressions upon localities most easily influenced.

Peyrot claims that if a blow is received by the chest it is distributed to adjacent structures, but the lung itself is independent of this movement. Any want of elasticity, however, will favor yielding under stress, and injury results. This is direct injury. Moreover, there are numerous foci of latent weaknesses and chronic maladies in the average lungs which are liable to be affected by force thus extended. Tubercular diseases, pulmonary emphysema and congestions, as from heart disease, alcoholism, etc., act as predisposing causes and give wider range to traumatic influences than would be available in normal conditions.

Adhesions may influence changes in a mechanical way in parts remote from the seat of force. The jar may awaken a latent disease protected hitherto by areas of inactivity and solidification.

Many intrinsic and extrinsic causes must be considered in the efforts to account for pneumonia which will appear peculiar to each case and constitute the individual factors. One thought must be ever present with the physician called to examine the chest after injuries, and that is the universal possibility afforded everywhere for acquiring traumatic pneumonia. Pneumonia is today made available to all. The wholesome and the unwholesome, the wise and the unwise, are almost equally liable to become its victims. Nor is it needful that they await the incubation period of the pneumococcus or streptococcus, but by thoughtless dalliance during the millionth part of an instant in the way of a rapid transit electric car or a twentieth century juggernaut—the automobile—pneumonia begins to weave the network of death in the lungs. From the cultivated "interference" of the foot ball field, the polite fistic arena and other places for the display of athletic proficiency, as well as amid the hum and whir of mill and workshop, and from every point of the world where the strenuous life of the twentieth century thrills human kind, traumatic pneumonias are reported. These augment the numerical statistics of pneumonia and increase the mortality.

Interest in the subject is enlarged also by its medicolegal aspect. It is required that the physician commit himself most positively and under oath to the theory of its cause and consequences. The numerous incidental notations which concern the history, the onset, complications and sequelæ will be investigated by life assurance companies, accident insurance associations, and other corporations or individuals charged with liability, and tedious trials and litigations demand of the attending physician the most careful, exact and conscientious judgment of which he is capable.

The question will arise, "is the pneumonia an accidental or coincidental circumstance?" This must be answered by the physician in every case involving medical and surgical possibilities, whether before the legal judiciaries or the bar of his own conscience.

The responsibility of the physician ends not with the apparent cure of the acute conditions, but continues without limit because of diseases which develop later and may be regarded as sequelæ.

Pleurisy, pneumothorax, pyothorax, empyema, phthisis and almost every malady in the category of chest disorders have been charged to injury received at some period in life. The postmortem evidences have been most effective in some investigations.

When a physician is called to a case of injury liable to produce traumatic pneumonia he will probably find a rapid pulse and accelerated respiration, and in fully 65 per cent. the sputum will show some blood within a few hours, if not immediately. The shock is the first element of alarm demanding attention. The respiration reaches 60 to 70 per minute, but is not so common a symptom in adults as in children, and does not always correspond with the extent or gravity of the injury. Hamilton notes that "expectorations of blood in most cases occur immediately—frequently not until after the lapse of several hours, or even days, but it is rarely seen after the fifth, sixth or tenth day." The writer observed in a recent case that spitting of blood continued until the fourteenth day after the injury. Dyspnea may be absent, and no duskiness of the face, and nothing to suggest injury except disturbed breathing. No general or extensive contusion may appear with the history of a slight blow, affecting one portion of the chest and yet the shock be most disastrous. A condition of syncope immediately following trauma may be due to direct stimulation of the vagi, or to direct cardiac compression. The depressor nerves and the sympathetic may also act as causative agents in lowering the blood pressure during any prolonged period.

The examination of these cases must be conducted with celerity, and the physician should endeavor to give the patient as little discomfort as possible. The horizontal position is usually the safest and one causing least suffering. The external bruise or contusion will heal rapidly, and the pneumonia usually gives its characteristic signs and symptoms after forty-eight hours from the time of the contusion. This pneumonia may or may not be promoted by a destruction of continuity of the lungs, pleura or bronchial tubes, and the mechanical jar of the impinging stroke cause a slight tenderness or soreness which may arouse latent pneumonic energies which otherwise might have continued in abeyance or be counteracted without reaching the dignity of a pneumonia. Slight concussions are rarely dangerous in a purely surgical sense, but can thus directly prove fatal, and it is well to remember that infection may come to the lungs thus crippled and phthisis speedily follow. The relations of time to these consequences are very variable, and it is not safe to say that pneumonia coming on a fortnight after the injury of the lungs is not due to concussion, nor is it to be regarded as a safe position to assume that a phthisis, following years after the lungs have shown apparent cure, bears no responsibility as a causative agency. The rusty sputum is likely to succeed upon the streaked sputum as soon as the pneumonia reaches its second stage. Moreover, the diplococcus is to be found in traumatic pneumonias as easily as in cases free from injury. It is a fact that these germs are to be found in the mouths of most healthy people.

Jobert separates into three degrees, or classes, these injuries:

First—Hemorrhagic punctata from capillary rupture, the parenchyma remaining intact.

Second—Includes those in which small ruptures exist in tissue, including alveoli, bronchioles and vessels about them.

Third—Tears of the lungs, bronchi and vessels.

No systematic or conventional method of observation or treatment can be provided for these cases, as each is a law unto itself, yet a review of a few of the records may prove of advantage.

E. Block tells of a man 41 years old falling and striking upon the lower portion of the right side of his chest, who developed signs of pneumonia the following day in the right lower lobe. No chill was recorded, and the crisis occurred at the end of the fourth day. Bloody sputum was absent. It is assumed in the report that a moderate injury of the lungs may have given opportunity for the invasion of the pneumococci, which were found in the sputum.

Dr. R. A. Booth, physician to the City of Pittsburg, is quoted as having a case of traumatic pneumonia a few days ago in the hospital, caused in a man 62 years old, and which proved fatal in the fourth day. At the hospital the patient told the attendants he was injured by falling down stairs. A number of cases gathered by research have been charged to similar accidents.

R. E. Lord has placed on the list a case of injury to the chest by striking against a desk followed by hemoptysis and consolidation of the lung immediately underlying the seat of injury. This is one of a number of reports of cases of traumatic pneumonia resulting from violent contact of the chest and the edges of desks.

Dr. A. Koch adds the case of a man aged 38 years who fell from a height and received a severe contusion of the left side of the thorax, and in less than forty-eight hours after died in the hospital. Postmortem examination showed croupous pneumonia, with red hepatization and pneumonia bacilli. The man was free from disease at the time of the accident, and the ribs were not injured.

A case of "contusion pneumonia" contributed by Aufrecht shows that the pneumonia occurred on the side opposite to the injury, which later was produced while pushing a wheelbarrow heavily loaded, when the left handle struck upon the left side of the chest. The man was 38 years old, and up to the time healthy. About ten hours after the accident pneumonia appeared on the right side. Three days after the injury he died. An autopsy showed pneumonia of the right base.

During a professional experience of over three decades there have been personal opportunities afforded for observation in the City of Iron and Smoke. The list of traumatic pneumonia, inclusive of fractures of the bones and cartilages, as well as those due to contusions and concussion, challenges credulity. Those within the scope of this paper are not so numerous, and a brief recitation of some of these will be interesting. A man aged 29, of good health and uncertain family history was thrown upon his back and rudely tossed against the front door of an electric car which had deserted the track at a sharp curve and collided with a telegraph pole. He was completely disabled, and was lifted into a carriage and conveyed to his home, a distance of five blocks. Dyspnea, with the psychologic evidence of excessive alarm, were associated with blood-spitting and complaints of unease within the thorax. Appropriate treatment speedily annulled the immediate signs of the shock. Perfect quiet in the recumbent position was secured, but notwithstanding these precautions, a traumatic pneumonia was in evidence before the conclusion of the first forty-eight hours, without any special features, except that the hemoptysis gave place to rosy sputum on the third day. This case terminated by lysis, and was followed by prolonged convalescence. Three months later hectic symptoms appeared and tubercle bacilli were found in the sputum. A few days short of two years after the accident the life terminated. A suit was brought by the relatives against the street railway company, whose legal advisor made satisfactory settlement.

A man aged 61, of reasonable health, who was filling the duties of labor boss, was caught between an overturned wagon and the side of an excavation. His release was affected after about eight minutes. He was faint and suffered from a sense of suffocation. The employment of alcoholic stimulants, administered by the mouth, and crude attempts at artificial respiration gave him some relief until medical aid arrived. Hypodermatic use of strychnia and brandy were resorted to with good results. He was removed to his home and placed in the most restful and quiescent condition possible. This man developed a pneumonia before the end of the first twenty-four hours, in which the temperature range never exceeded 103.8. The pulse, which was 148 during the period of shock, fell to 118 after the lapse of ten hours, but fluctuated between this and 138 without apparent cause. This case showed no real abatement until after the fourteenth day, when the pneumonia ended rather abruptly, and all symptoms disappeared gradually. The patient resumed his former occupation at the beginning of the sixth week.

A man aged 57 years was walking on the railroad track when he was struck by an engine and precipitated over an embankment of 16 feet, sustaining fractures of the right humerus in two places. The force of the stroke caused the arm to infringe upon the right side of the thorax, producing an extensive contusion over the entire side. Blood-spitting appeared immediately. After sixteen hours, and without chill, the temperature reached 103.8, respiration 44 and pulse 128. The signs and symptoms of pneumonia continued until the seventh day, when they suddenly diminished and convalescence was rapid, leaving only the external surgical conditions for treatment. After a lapse of twenty-eight months this man continues in perfect health.

Dr. Ulysses Strouss of Beaver, Pa., reports a case in a man aged 32, standing on the rear end of his wagon unloading coal, when his horse suddenly started forward and he was thrown violently to the pavement, alighting on the posterior superior portion of the chest. He spat blood in a few minutes after the accident, which was succeeded by traumatic pneumonia, terminating by crisis on the fifth day, and there was rapid recovery. Six months have elapsed and no unfavorable symptoms have appeared.

A case illustrative of the lapse of time before betrayal of the results of injury is that of a man riding in an automobile and colliding with an electric car, precipitating him to the pavement with considerable force, upon the posterior aspect of the chest. The injury did not retire the subject from his duties until after the expiration of ten days, when a large quantity of dark blood was expectorated, in which the molds of the bronchial tubes were plainly demonstrated. The temperature ranged during four days between 102 and 103, when it ended by lysis. The physical signs were those of bronchopneumonia, with copious mucous râles of varied size, and cough and respiration of suffocative character. The sputum was examined carefully for tubercle bacilli with negative results. Subsequently, by the city physician, with like report. A third specimen expectorated in the writer's presence, and divided into three parts, was examined by three different persons, and several bacilli discovered by one. The last reports have been that the patient is perfectly well. This accident occurred ten months ago.

A man aged 41, lumber dealer, and of good habits and health, was thrown from the steps of a rapid transit car while attempting to alight, the signal to start being premature, and he received a severe stroke upon the anterior portion of the chest walls. He was taken to his hotel and placed in bed. No fracture existed, but in a few minutes after the fall he expectorated some blood-streaked sputum. Ten hours after the accident a fever of 104, pulse 138 and respiration of 52 were observed. The sputum became thoroughly mixed with blood and rusty. This case was prolonged, ending in lysis the fourteenth day after the advent of fever. Convalescence was slow, and the patient never recovered fully from a bronchial catarrhal condition, with numerous streptococci, but no tubercle bacilli in sputum. This case is still under observation. The chest is of paralytic appearance and conformation, and the subject admits the history of former bronchial catarrh, but claims that it was but temporary.

One of the most remarkable cases in the writer's experience was that of a man aged 31 years, 5 feet 8 inches in height, weight 168 pounds, of good family history and excellent health, a puddler by occupation, who was struck forcibly upon the right anterior portion of the chest by the handle of the tongs with which he was transferring a ball of metal. He immediately became faint and was seized with dyspnea. A physician examined the chest without discovering any external or internal signs of injury, except a swiftness of respiration. After the use of hypodermics of strychnia, brandy and other antidotes to the shock, he was able to go to his home by street car, a distance of about four miles. Here he received attention during the succeeding four days, and the diagnosis was pneumonia. The temperature, pulse and respiration, rusty sputum, etc., were in evidence in the history, as related to the writer, who was called in consultation on the fifth day, because of the alarming dyspnea which suddenly appeared. The patient was on his knees on the floor pressing the anterior portion of the chest against the mattress and begging for relief for his breathlessness. His features mirrored his desperate suffering. The side opposite to the pneumonia was distended to its utmost by pneumothorax. A paroxysm of severe coughing had preceded the pneumothorax, and doubtless produced a bronchial communication with the pleural cavity belonging to the lung engaged in supplementary respiration. The discomfort was reduced by a hypodermic injection of morphia gr. 1/4, repeated in two hours. The proposition to use a trocar and give exit to the air was persistently rejected. After twelve hours it was determined to give surgical relief, regardless of the patient's opposition. At the hour appointed for the operation the patient was lying calmly in bed, the signs of distress had departed, respirations were reduced from 56 to 40, the pulse from 132 to 110, and the temperature had fallen 3.8 degrees. The physical signs of pneumonia were not gone, neither were those of pneumothorax wanting, but to each side they were much reduced, and the operation was abandoned, and the case progressed to a favorable termination of the pneumonia, which had ended by crisis, but the evidence of effusion succeeded the pneumothorax. The patient, notwithstanding all this, gained flesh, refused to have the fluid removed, and worked six months at the puddling furnace, after which he visited his home in Scotland, returning to his duties at the end of four months. He presented himself for examination one year and two months following the accident with a pyopneumothorax which had evacuated itself of one pint to three pints of pus through the mouth, repeating the evacuations at intervals of twelve to sixteen days. Specimens of this fluid examined on several occasions revealed numerous tubercle bacilli, streptococci and other microorganisms. This spontaneous method of relief continued during seventeen months, when it ceased, and the pleural cavity became distended, to finally present an empyema necessitating pointing between the ninth and tenth ribs on the vertical midscapular line. A hectic condition continued the pulse, temperature and respiration elevations for some time.

He was taken to the hospital and the chest opened, drained and washed out and treated with antiseptics. After three weeks he returned to his home much improved, but gradually yielded to phthisis eight months thereafter.

The study of these cases must include their medical, surgical and legal aspects. This has been advanced by references to numerous authorities and cases. Diagnosis, differentiation and treatment are so interwoven that it seems like supererogation to go into any further detail. The prognosis has been intimated. The medical treatment should be similar to that of ordinary pneumonia plus the demands of the surgical contributions. Complications or sequelæ are also subject to general and well-known medical and surgical management.

VERNAL CONJUNCTIVITIS.*

WM. CAMPBELL POSEY, M.D.

PHILADELPHIA.

So little is understood concerning the pathogenesis of vernal conjunctivitis, and its treatment is so generally ineffective, that it occurred to the writer some months ago to address a circular letter to ophthalmic surgeons throughout the United States, with a view to ascertaining their experience in studying and treating this rare form of disease, and especially for the purpose of determining whether locality influenced the frequency of its occurrence or modified its clinical manifestations.

The paper which follows has, accordingly, been based in large measure on the answers which were received, together with a few personal observations which the writer has been enabled to make on a number of cases which have come under his own care.

HISTORICAL SUMMARY.

Before proceeding with this, however, on account of the rarity of the disease and the still comparatively scanty literature upon it in the English language, it may not be amiss to review briefly its history and chief characteristics. Although Arlt, in 1846, undoubtedly referred to this disease in a paper in which he described "Three Cases of Infiltration of the Limbus by Grayish Yellow Transparent Gelatinous Masses," and Desmarres likewise, when he referred to cases of what he designated *hypertrophie perikeratique de la conjunctive,* it was not until 1872 that vernal conjunctivitis was assigned a place as a distinct and separate form of disease, by Saemisch and his pupil, Brockhaus. In addition to Arlt and Desmarres, Graefe, de Wecker and Hirschberg had also reported cases which were beyond doubt true instances of vernal conjunctivitis, but they assumed, in common with Desmarres, that they were dealing with unusual forms of phlyctenular disease.

Saemisch's account of the disease is very complete, and the symptomology which he gave of it is much the same as we know it to-day, with the important exception, however, that he failed to include in his description any lesions of the palpebral conjunctiva. These, which are probably the most common, and certainly the most characteristic features, were first noted by Raymond in 1876, and described more fully by Vetsch in 1879. Since that time a number of important monographs have appeared which have further established the propriety of classifying it as a distinct form of conjunctivitis. Burnett, of Washington, was the first to call the attention of American ophthalmologists to it, in an article which appeared in 1881, entitled "Circumcorneal Hypertrophy of the Conjunctiva." In 1884 Kipp, of Newark, made the second contribution to the American literature. Since then Gifford, Gradle and May have made communications of value and importance.

Vernal conjunctivitis, as we know it to-day, and as it occurs in all probability the world over, consists of an inflammation of the conjunctiva, at times of the lids alone, at times of the globe alone, and not rarely of a combination of these two, possessing certain physical features which distinguish it from all other forms of conjunctivitis, but which has, in addition, the peculiar characteristic of appearing with the advent of warm weather and of disappearing with the cold, and of repeating this peculiarity year after year. This seasonable characteristic, whence the name of the disease is derived, is the essential feature of vernal conjunctivitis.

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The physical appearances of vernal conjunctivitis are as follows:

I. LESIONS OF THE PALPEBRAL CONJUNCTIVA.

(*a*) The most constant, and perhaps the pathognomonic symptom is a peculiar bluish white, milky appearance of the tarsal conjunctiva. Vetsch was the first to describe this condition, which is present in a greater or less degree in nearly all cases. In the few instances where it is not present the conjunctiva appears dull, infiltrated and thickened.

(*b*) The surface of the thickened conjunctiva may be smooth; usually, however, there are a number of elevations which present a striking appearance, resembling the granulations of no other form of conjunctival disease. These elevations present a pale pinkish, waxy appearance, and are quite flat, resembling plaques with crevices between. They are situated on the tarsus, the fornix being free, and are usually thickest in the middle of the lid. They are slightly pedunculated.

(*c*) In another and smaller group of cases the granulations are not so flattened, are yellow, semi-transparent, and cover more of the conjunctiva of the lid. These bear a close relationship to the granulations in follicular conjunctivitis.

In all three types the upper lid is the most affected, the conjunctiva of the lower lid being rarely more than thickened, with but a few elevations on it. The granulations are hard and gristly, this being especially true of the more rounded variety. A watery or mucous discharge is more or less constant, rarely it becomes mucopurulent, but never purulent.

II. LESIONS OF THE OCULAR CONJUNCTIVA.

(*a*) The limbus of the cornea becomes thickened and encroaches upon the cornea, forming a narrow ring of grayish yellow opacity, which encircles the cornea. The inner edge of this zone is sharply circumscribed; the outer blends gradually with the surrounding tissue. This area of infiltration does not show any tendency to broaden and invade the central portion of the cornea, or to break down into ulcers.

(*b*) Large yellowish red elevations, more or less circumscribed, appear at the limbus in the palpebral fissure, either on the nasal or temporal side, or on both. These are usually somewhat triangular in shape, but may be oval or quadrilateral. When the former, the base of the triangle is situated at the limbus, and is sharply defined from the corneal tissue, while the apex blends gradually with the episcleral tissues toward the equator.

(*c*) Under this class is included a combination of the first and second forms; in this type the entire limbus of the cornea is thickened and occupied by a series of irregularly rounded warty like tumors, grayish yellow in color. The inner edge of the zone of infiltration is not so sharply defined as in the two preceding types, and at times the corneal tissue is encroached on to a considerable extent. No case has been reported, however, where this was sufficiently marked to affect vision.

(*d*) Ordinary saturated ulcers of the cornea, which sometimes result from pressure and irritation, occasioned by unusually large and hard granulations in the palpebral conjunctiva. The tumors or elevations which surround the cornea are like the granulations in the conjunctiva of the lids, hard, dense, and as a rule non-vascular. They are not painful on pressure.

It is extremely rare that the disease occurs in the typical form, exhibiting the characteristic lesions of the tarsal and bulbar conjunctiva at the same time; though even in those cases where the elevations are most marked on the bulbar conjunctiva, there is usually at some time or other during the course of the disease, at least the milky haze, if not the characteristic granulations, on the tarsal conjunctiva. Terson has pointed out that often there is a kind of compensation between the tarsal and the pericorneal lesions, the characteristic changes being absent in one part when they are present in a marked degree in the other.

PATHOGENESIS.

Various observers have thought the disease to be dependent on a diathesis, and syphilis, scrofula, rickets, gout, and a general neurotic condition have been variously described as the soil upon which vernal conjunctivitis develops. It is possible, however, to exclude each of these in most cases, the disease occurring for the most part in perfectly healthy subjects; nor is there evidence, as will be more fully stated later, to assume that the disease is secondary to any local inflammation elsewhere, as in the throat or nose. In this connection, however, mention must be made of the relation of vernal conjunctivitis to recurring skin eruptions, by reason of the frequency with which eczema has been encountered in cases of vernal conjunctivitis by foreign observers, among whom may be mentioned Uhthoff, Vetsch, Danvers and Terson.

It is generally recognized that vernal conjunctivitis shows a predilection to develop in low-lying localities, the testimony of men from mountainous regions being that they see but few cases, and none at all from the highlands. The influence of humidity in aggravating the symptoms has been remarked, and the conjunction of a high temperature and high barometer has been found to be most distressing to subjects of the disease. Although certain authors would have it that a country life predisposes to the affection, there is no evidence to prove this, as it appears that city life, with the irritation provoked by the dust from the street and by the smoke with its carbon particles suspended in the air, offers as favorable conditions for its development.

Unlike most forms of conjunctivitis, vernal conjunctivitis affects all grades of society. All races are apparently equally susceptible, both whites and blacks being subject to it, and the disease seems to occur with the same relative frequency among the Jews.

On account of the recurrent nature of the affection, a micotic origin has been repeatedly searched for, but as yet no pathogenic micro-organism has been isolated.

It was thought by some, by reason of a certain similarity in their physical appearances, that vernal conjunctivitis was a form of trachoma. Until the morbid entity of both diseases is better understood, it is impossible to deny absolutely a relationship between the two, but the course and sequelæ of both diseases are so different that there are but few who now hold to such a theory. In like manner, there is no evidence to support the theory of an association with phlyctenular conjunctivitis; indeed, though Knus would regard vernal conjunctivitis as a peculiar hyperplastic conjunctivitis in intermediate relationship with the ordinary inflammations of the conjunctiva, and thinks that the disease is a modification, or at any rate develops from these, there are no grounds to couple it with any form of other ocular disease.

PATHOLOGY.

An excellent résumé of the histological changes which have been seen by various observers in vernal conjunctivitis, has been recently given by Terson. This author states that with few exceptions writers have given an excessive preponderance at one time to the epithelial nature, and at another to the subepithelial character of the granulations; so far as he is concerned, however, he agrees with Redmond in holding that the epithelium, although proliferated, does not constitute the mass of the neoplasm, but that the granulation is really a proliferation of the conjunctival tissue itself, with the increase in the number of elongated and narrowed cells, and also of embryonal and round cells.

In common with others, Terson noted that the histological changes differ somewhat in the pericorneal and tarsal forms; thus in the former he found a thickened epithelium of stratified pavement cells of a greater number than normal, but without the invagination noted by most authors; there was no well defined basal membrane; the tissue contained vessels, dilated capillaries and lymphatics, but was lacking in cells; the conjunctival cells were flattened and fusiform, and were compressed between enormous bands of fibrous connective tissue. In addition to these changes, he observed that the tarsal granulations are provided with an epithelium which is less abundant, though of the same nature, and without epithelial invaginations, the mass of the tissue being equally fibrous, though the infiltration with round cells and with leucocytes is much less marked. In this class of cases there is a proliferating tarsoconjunctivitis, a true papilloma of the tarsus, greatly hypertrophied and proliferated with elements which are newly formed and without the enormous lymphatic nests of trachoma. It was noted that in the tarsal variety the epithelial proliferation is less important than in the pericorneal, and that the typical granulations are formed by the subepithelial tissues.

Terson concludes finally that, as a mark of differentiation from the granulation of trachoma and the pustule of phlyctenular disease, the vegetation of vernal conjunctivitis is indurated, and he regards it as being really an attenuated papilloma which does not attain the composite structure and full development of the true form.

These views are substantially those of Danvers, who based his observations on a series of specimens, some of which were taken from eyes at the very commencement of the disease, others in the third year of the recurrence, and others after the tenth year of recurrence.

From the study of sections of the tarsal conjunctiva taken from three cases and mounted for him by Dr. E. A. Shumway and Dr. Harold Goldberg, the writer found a dense fibrous tissue beneath the epithelium which had apparently occasioned the elevations. The epithelium between the contiguous elevations could be seen to dip down below them in finger-like prolongations from the surface. Sections made parallel to the surface showed a network of epithelial cells with the spaces in it filled with dense fibrous tissue, each patch of fibrous tissue having a central blood vessel.

SUBJECTIVE SENSATIONS.

The disease usually begins, like an ordinary attack of catarrhal conjunctivitis, with smarting, burning and lachrymation, though an annoying itching sensation in the lids is apt to predominate. These symptoms persist with remissions during the course of the disease, being aggravated by hot murky conditions of the weather and ameliorated on dry and cool days.

COURSE.

The symptoms usually begin with the first warm days of spring, and persist until the days become permanently cool in the autumn. The disease is essentially chronic, recurring each year with obstinate persistency. In a few cases there are remissions, the symptoms failing to manifest themselves during an entire summer, this exception being attributed by Danvers and others to a relatively low humidity during these particular years.

DIAGNOSIS.

In its typical, or even under the forms under which vernal conjunctivitis usually presents itself, there should be no difficulty in differentiating it from any other form of conjunctivitis, provided, of course, the observer is familiar with its characteristics, either by study of a previous case seen by him or from a familiarity with the description of the disease as it now appears in all text-books on ophthalmology. In atypical cases, however, the diagnosis is not always an easy matter, and it will often need the history of attacks in previous springs to enable one to differentiate the not uncommon type where the filmy white appearance of the conjunctiva, the granulations and the lesions at the limbus are wanting, and the dull, thickened, infiltrated conjunctiva is the only apparent lesion, from an attack of phlyctenular conjunctivitis. But even in these cases the milky hue of the conjunctiva and granulations will usually manifest themselves if the case be kept under observation a few weeks.

Undoubtedly, however, the greatest difficulty in diagnosis is to differentiate the rather unusual type in which the granules are not flat, but round, and of a semitransparent pinkish yellow tint, from trachoma or from follicular conjunctivitis. Here the history of the case, the absence of pannus and discharge, will enable one to exclude trachoma, while the restriction of the granules to the upper lid, and to the median portion of the tarsus, and the hard, gristly nature of the granules, will make the diagnosis from follicular conjunctivitis. When the palpebral manifestations are absent and those at the corneal limbus are alone present, it is possible that vernal conjunctivitis may be confused with epithelioma, sarcoma, episcleritis, phlyctenular keratitis, gerontoxon, and certain pericorneal hypertrophies and verrucosities which are occasioned by sclero-choroiditis anterior. The history of the case, the age of the patient, and in doubtful cases the microscopic examination of a portion of the growth, will usually enable one to make the differentiation from tumors, while the diagnosis may be made from episcleritis and phlyctenular disease by the absence of signs of inflammation.

Such is a brief outline of the history, of the generally accepted clinical picture and of the pathogenesis and histology of vernal conjunctivitis, and of its diagnosis from other forms of ocular disease. Other details, in reference to its etiology, distribution, frequency, prognosis, treatment, etc., will now be considered, especially with a view to the expression of the views of American ophthalmologists on these subjects, as they have embodied them in their answers to the circular letter already referred to.

Can You Estimate the Proportion of Cases of This Disease in Your Locality, in Comparison With Other Forms of Conjunctivitis?

This, the first question, elicited a series of answers which were puzzling, and might have been misleading had several factors not been taken into consideration before any deductions were drawn from them. It was apparent, in the first place, that answers which were practically at variance with one another came from ophthalmologists in the same vicinity, often in the same cities and towns, all being based upon observations of ocular disease occurring among members of the same community. Where one would state that he saw ten cases of vernal conjunctivitis annually in his private and hospital practice, another would say that although he had been practicing in that community for twenty years or more, and had observed thousands of cases of ocular disease, he had never encountered one which he considered to be a true instance of vernal conjunctivitis. Thinking there must be some explanation for this, the writer had further communication with a number of those who disclaimed ever having seen a case, and elicited from most of these that they had been looking for typical examples, and relegated all others to other forms of conjunctivitis.

Taking this factor into consideration and making allowances for "the personal equation," in a number of instances, it was ascertained that vernal conjunctivitis existed in all parts of the United States, always as a very rare disease, but exceedingly uncommon in New England, the Northwest and the highlands of all the states, and that it occurred in most of the large cities of the other parts of the country, inland as well as seaboard, in the proportion ranging from one case of vernal conjunctivitis to every 200 to 500 of conjunctival disease.

Certain observers give a greater relative frequency and others a far lower, but this proportion is a conservative estimate of the average.

It was noted that the percentage of cases was higher in private than in hospital practice, but this, it is thought, may be explained by the lesser frequency with which all forms of conjunctivitis occurs among the better classes, and also by the fact that sooner or later, by reason of its intractability, nearly all cases of vernal conjunctivitis are brought to the private consultation of the ophthalmic leaders in every community.

It is difficult to ascertain how these figures compare with those obtained in other lands, but from personal observation and from communications received from Fuchs of Vienna and Collins of London, and from Terson's studies in Paris, the writer would judge that it occurred in these cities with about the same frequency as in the larger American cities. There is an impression among American ophthalmologists, particularly those who have spent some time in foreign clinics, that vernal conjunctivitis occurs more frequently abroad than at home. The writer, however, would recall to such the large number of patients in attendance at most foreign clinics, and that as students they saw all the rare cases in each clinic. Danvers quotes a number of statistics regarding the frequency of the disease in foreign lands, but does not mention the proportion in which the disease occurs with other cases of conjunctivitis, merely giving the frequency of its occurrence among the total number of cases. He found that as a general rule the disease is more prevalent in southern than in northern countries.

Do You Think This Disease Is Becoming More Prevalent?

From the answers received to this question, there seems to be no ground for the belief that vernal conjunctivitis is increasing in frequency, the relatively greater number of cases which have been observed in recent years being due, in all probability, to a more widespread knowledge of the disease, especially in its atypical forms.

Which Type Predominates in Your Locality—the Palpebral, Where the Disease Is Limited to the Conjunctiva of the Lids, or the Ocular, Where There Are Distinct Changes at the Corneal-Scleral Margin, or the Associated, Where Both Palpebral and Ocular Types Are Combined?

This question had a two-fold purpose; first, to ascertain whether locality had any influence upon the physical appearance of the disease, and secondly, to determine the relative frequency of occurrence of the various types. In regard to the first, it was apparent that locality has no influence whatever upon the type which the disease assumes, for upon this phase of the subject similar answers were received from the most widely separated parts of the country; bearing upon the latter point, the answers were most instructive, for they showed that the palpebral type was much the more common (60 per cent.), that the associated form occurred next in frequency (30 per cent.), while the disease was limited to the ocular portion of the conjunctiva in but 10 per cent. of the cases. It is possible that the percentage of cases of the palpebral type is even higher, as many cases of this type are doubtless overlooked, either from the patient not seeking relief, or from the ophthalmologist not recognizing it, by a failure to evert the lid; when the changes are at the scleral-corneal margin, the diagnosis is more readily made.

It is proper at this point to refer to a type of the disease which Burnett, of Washington, has described in negroes. In his article, which appeared in Knapp's "Archives for Ophthalmology" (Vol. X, page 414), under the title of "Circumcorneal Hypertrophy of the Conjunctiva," this distinguished observer said that "In addition to these appearances (i. e., the typical) which I have observed in both the white and colored races, I have found quite a peculiar and remarkable appearance in the conjunctiva in every case of this disease I have met with in the negro. This consists in a brownish discoloration of the conjunctival tissue, most intense at the scleral base of the mass, and gradually fading away toward the equator of the ball. This discoloration, which is undoubtedly situated in the conjunctival tissue itself, as well as in the epithelial layer, is not regular in its distribution, but appears to consist of a collection of small deposits of brown pigment. These deposits are sometimes collected in rather large masses, particularly near the base of the elevation, but toward the equator they appear as small brownish specks in the dull and succulent conjunctiva. In some instances this brownish discoloration extends but 3 mm. from the circum-corneal elevation, while in others it reaches almost to either canthus."

Though Philadelphia is a northern city, it has a very large colored population (60,000), and the writer is in charge of three large clinical services, two of which are situated in the quarter in which most of the negroes dwell. He has observed the changes so accurately described by Burnett, a number of times, but has always considered them to be occasioned by a marginal phlyctenular keratitis, or to changes somewhat similar to those producing pingueculum or pseudo arcus senilis. The inflammation in this class of cases persists all the year, is not associated with the peculiar whitish film and flattened granulations of the palpebral conjunctiva, and usually yields readily to tonics and the local remedies prescribed in phlyctenular keratitis. To obtain further testimony regarding this subject, special letters which covered this phase were addressed to a number of eminent southern ophthalmologists, and the replies of all indicated that while they had observed vernal conjunctivitis in negroes, they had found that it assumed its ordinary form in this race also, and that though they were familiar with the changes observed by Burnett in the limbal tissues of these subjects, they did not consider them to be in all instances due to vernal conjunctivitis, but in most cases to be the result of a localized inflammation of the limbus, as they considered that there was a tendency to a thickening of the tissues at the margin of the cornea in most inflammatory diseases of the eye of the negro.

Do You Often See the Peculiar Flattened Fungoid Elevations of the Palpebral Conjunctiva Referred to in the Text-books; or does the Disease Take the Form of a Thickening of the Conjunctiva Without the Development of the Elevations?

In the description of the clinical varieties under which vernal conjunctivitis might occur, the writer divided the palpebral forms of the disease into three classes; (*a*) those which present the milky white appearance of the conjunctiva, and others where this is absent, but in which the conjunctiva is dull, infiltrated and thickened; (*b*) those in which the conjunctiva is covered by rows of flattened elevations, and, (*c*) those in which the granulations are round and yellow, and harder than in the preceding variety.

From an experience gained by carefully following three cases during the past ten years, and a dozen or more for shorter periods, the writer is of the opinion that the first two forms represent but different stages in the development of the disease. In the first year or two, before the disease has persisted sufficiently long to produce very marked changes, the conjunctiva is in the condition described under class (*a*). After several years of recurrences, however, and proliferation of the epithelial tissue, elevations form, which attain a greater growth each year unless treatment is inaugurated. Such elevations are usually flattened, but occasionally assume a rounded form. This latter type is most intractable to treatment, persisting through the winter, and manifesting a tendency by the size and hardness of the granulations to injure the cornea by mechanical means. Cases of this type resemble trachoma, and it is probable that May referred to these in his report of six cases of mixed forms of trachoma and spring catarrh. From a careful reading of his article, it does not appear to the writer that May substantiated a diagnosis of trachoma in any of these six cases, the slight cicatrization in the conjunctiva being readily explainable by the employment of caustics and operations of expression, and the faint trace of pannus to an irritation of the cornea by the granulations.

From the answers received to these questions, it was apparent that elevations in the conjunctiva appeared in about 60 per cent. of all cases, though in many they were but slightly marked.

Have You Found Both Lids to Be Affected, or Have You Noticed a Predilection of the Disease to Attack the Upper Lid?

The majority of the answers showed that both lids were, as a rule, affected, though the lower lid rarely manifested more than the thickening already referred to, the milk-white haze and the elevations being seen only on the upper lid. Callan, of New York, explains the occurrence of the granulations on the upper lid, to the greater pressure to which the conjunctiva of that lid is subjected, and believes that this excites tissue changes, analogous to the growth of a corn on the foot.

Have You Ever Seen the Disease Limited to One Eye?

Vernal conjunctivitis is essentially bilateral, though from the answers received it is apparent that in a small number of cases (7 per cent.) it may be limited to one eye. It is possible, however, that even in these few cases, the observers may have seen the disease in an early stage, and that manifestations appeared later in the fellow eye.

Do You Think the Peculiar Whitish Coloration of the Conjunctiva the Most Constant Symptom of the Disease?

From the statistics it was learned that the conjunctiva presented a milky white appearance in 70 per cent. of all cases. This sign was present in every instance in the palpebral variety except in those which were characterized by the rounded variety of granulations and in another small number where the conjunctiva was dull and thickened. This appearance must be regarded as the pathognomonic physical sign of the disease, as the pathologic changes on which it depends, i. e., the thickened epithelium augmented later by the formation of a delicate subepithelial film of cicatricial tissue, must occasion it sooner or later. It is usually an early manifestation.

What Have You Found to Be the Age Limits of the Disease?

The experience of American ophthalmologists corresponds with those of European observers in regard to the age limits, cases being cited in the statistics occurring at ages ranging from 18 months to 50 years. The majority concurred, however, that the disease had its most frequent manifestation between the years of 6 and 16, and that it was very rare in individuals over 40 years of age. Desmarres noted that the disease could occur in very young children, at times almost congenitally. The writer has observed a well-marked case of the pericorneal type in an infant of 8 months, and Fuchs writes him that he has treated the disease in a man over 60 years of age. Risley reports a case in a man 50 years old.

Have You Observed Vernal Conjunctivitis in Females, or Do You Think Males More Liable?

The statistics obtained from the answers to this question showed that the experience of American ophthalmologists was analogous to that of Knüs, 85 per cent. of whose cases were males and but 15 per cent. females. A number recorded never having seen a female affected by the disease. No explanation of this comparative immunity of women has yet been offered.

At What Month Does the Disease Usually Appear in Your Neighborhood, and When Does It Disappear?

As would be supposed from the earlier advent of hot weather in the south, answers from the southern ophthalmologists showed that the disease appears earlier there than in the north. This subject is best considered under two headings; first, as regards subjective symptoms, and, secondly, objective signs. The former appear during the first few warm days of spring, and disappear entirely only with the cold weather of the autumn; the objective signs may, however, persist through the entire year—and this is particularly true of cases exhibiting the hard rounded granulations in the conjunctiva and those with large prominence at the limbus, though occasionally a few flat granulations, and more rarely the whitish film of the conjunctiva will persist through the winter months, even in comparatively mild cases.

Although the time at which the disease first appears varies each year, according to the temperature, the first symptoms manifest themselves, as a rule, in the northern states in March or April, and in the southern states a few weeks earlier. By October all acute symptoms have usually disappeared. It has been the experience of the writer that when the atmospheric conditions which favor an outbreak of vernal conjunctivitis are present, that many of those who had been under his care in previous years for this disease, would consult him within a few days of one another, giving unmistakable evidence of the relationship existing between the various types, and enabling him to classify several cases as vernal conjunctivitis of whose precise nature he had been up to that time somewhat in doubt. He would also call attention to the fact already noted by others, of the influence which humidity has in precipitating attacks, the two factors of excessive humidity and high temperature being apparently necessary for an outbreak of the disease.

Have You Found That the Disease Grew Less Marked in Succeeding Years?

It was learned from the consideration of the ninth question that it was only in very rare cases that vernal conjunctivitis was seen in subjects after 40 years of age; it was judged from this that either when this age was attained, the pathogenic agent producing the disease had exhausted itself, or that by that time changes had occurred in the tissue of the conjunctiva which rendered it immune to the particular agent causing the disease. It was hoped that the answers to this question might determine whether there was not some limitation other than age, and whether the hope could not be extended to subjects of the disease that although treatment appeared ineffectual in curing the attack in any one year, nevertheless changes were wrought by it which would occasion a disappearance of the symptoms after a period of years. The writer's observation of nine cases which he has been able to follow by comparatively frequent study, for the past six years, indicated that though the disease persists in most instances for six or eight years, it loses its activity after that time. The observation of others corroborates this, as well as the rarity of the disease, for did it persist in all instances from the time of its first appearance, in early infancy perhaps, with annual manifestations, until adult life was attained, it would be much more commonly met with than is the rule; although Weeks speaks of a case in which recurrences had taken place every year for seventeen years, and Schwenck has followed a case since 1885, who has had yearly remissions.

It may be stated in general that the disease shows a tendency to become less marked from year to year; there may be years when, owing to some unusual climacteric influences, or to some special systematic condition of the patient, the symptoms are aggravated, but generally speaking, they seem to lessen as years go by. Whether this may be attributed to the persistence and continuance of treatment, or to changes in the ocular tissues themselves, can not be ascertained.

The prognosis, therefore, of vernal conjunctivitis may be stated in general terms to be good, for although the duration of the disease is protracted, and its symptoms so annoying in many cases that all use of the eyes must be suspended during a considerable period of each year, the ultimate issue is favorable, for with the exception of the ulceration of the cornea, which is occasioned in a few instances by the hard and horny granulations in the comparatively rare form of palpebral involvement, the center of that membrane is unaffected. As a general rule, the disease disappears wholly, leaving no trace in either the lids or the eyeball, though in a few cases certain changes occur which detract from the appearance of the eye from a cosmetic standpoint.

The most constant of these is a white ring of opacity on the margin of the cornea and a slight drooping of the upper lids, which imparts a sleepy look to subjects of the disease.

Have You Found Any Connection Between the Ocular Disease and Any Other Local Disease, Such as the Nose and Throat?

Upon account of the close anatomical connection between the mucous membrane of the eye and nose and pharynx, most cases of vernal conjunctivitis present symptoms of more or less irritation of the nose and pharynx. This has occasioned in the minds of many the belief that the inflammation of the mucous membrane of the eyes was secondary and dependent on a disease of the naso-pharynx. The answers would indicate that a number of American ophthalmologists held this view, which agrees with the observations made abroad by Coüetoux, Tétan, Silex, Danvers and others; the writer, however, quotes the opinion of the majority of American observers when he states that he believes the naso-pharyngitis to be purely of secondary origin, and to be explainable in the words of Bennett, of Buffalo, as follows: "The lacrimation in these cases is often excessive, and the carrying off of so much extra fluid into the nose causes the turbinals to become soggy, and the nostrils to become wholly or partially occluded. The proof of this to my mind is that, when the elevations in the lid are removed, the excessive lacrimation ceases and the catarrh rapidly subsides."

In 1886 Gradle, of Chicago, reported four cases of a disease of the conjunctiva, which, by reason of their periodicity—lasting only during the warm season—suggested to him that they represented the pathologic entity known as hay fever, localized, however, entirely or principally in the conjunctiva. Although there was no manifestation on the globe, the changes in the tarsus were characteristic of vernal conjunctivitis. In a later paper (1895) this author states that the etiology of the affection is unknown, and adds that none of the cases observed by him presented the history of annually recurring typical hay fever.

Have You Ever Known the Disease to Be Contagious?

All of the answers to this question were negative, with the exception of that received from Weeks, of New York, who replied that "often two or more in a family were attacked, a fact which points to a contagious quality," although, he adds, "it is possible that infection alone may explain the manner of the acquisition of the affection in all of the cases that come before us."

Have You Ever Known the Disease to Be Hereditary?

Although the answers received to this question would tend to corroborate the view held hitherto, that the disease is not hereditary, a number of replies were received which indicated that the reverse might sometimes be true. Thus Wilder, of Chicago, cites the case of a boy 6 years old, whose mother gave a history of having had attacks of vernal conjunctivitis for a number of years, although an examination of her eyes made at the same time with her son's, showed no signs of it. Stevenson, of Ohio, saw both mother and daughter affected. Jackson, of Denver, thinks that he has seen instances where the disease was transmitted to the second generation. Theobald, of Baltimore, reports cases of the palpebral variety occurring in both father and son; and finally, Gifford, Tiffany and several others believe the disease to be sometimes hereditary.

What Treatment Have You Found Most Efficacious?

The chief interset of the clinician in vernal conjunctivitis undoubtedly centers in the treatment, for there is perhaps no other disease in the realm of ophthalmology which has been found to be equallly resistant to all therapeutic effort. There is scarcely a drug or a measure which could exert any possible beneficial action on the conjunctiva which has not been essayed. On account of the resemblance of the granulations to those of trachoma, treatment which was known to be of service in controlling that form of conjunctival disease has been generally tried, but in most cases the caustics employed were found to aggravate the symptoms, and removal of the granulations by grattage or excision was usually followed by their rapid reappearance. Milder astringents have also been employed, but from the answers which have been obtained, the experience of American ophthalmologists is apparently in agreement with that of foreign authors, that while remedies may be at times of service in relieving acute symptoms, none have been found which exerted a curative influence. Among the drugs which have proven most valuable in alleviating the symptoms and shortening its course, are mentioned weak solutions of silver nitrate, or its substitutes, protargol and argyrol; formaldehyd solution and protargol 4 per cent., hydrastin, holocain, antinosin, solutions of adrenalin chlorid, dilute acetic acid, the chlorid and sulphocarbonate of zinc, ointments of yellow oxid of mercury, of salicylic acid and of lanolin. While the writer is forced to acknowledge the intractability of this disease in many cases, he still believes that there is reason to approach the conduct of cases of vernal conjunctivitis with some confidence of success. In the first place, he would insist upon the value of certain prophylactic remedies which should be applied to the conjunctiva for some weeks or even months before the annual attack in the spring is expected. For this purpose he employs weak astringent washes with occasional massage of the conjunctiva with unguent hydrarg oxid. flav. (½ per cent.). Casey Wood massages the conjunctiva with lanolin to obtain the same result. Any constitutional disturbance is corrected and general hygienic measures enjoined, such as out of door exercise and cold bathing. If well borne, arsenic should be administered internally, as a number of foreign observers think they have established the connection between this disease and certain eczematous skin eruptions. If despite these precautionary measures, the symptoms of the disease appear, then if this be the first attack the patient should be advised of the nature of the affection, and should be counseled to restrict the use of his eyes at near work on the days when his symptoms are most intense, and to remain as much as possible in a cool, darkened room, out of the irritation of the sun's rays. Dark glasses should be worn in the light. Iced compresses should be maintained almost constantly, and all lotions which are to be instilled should be iced also. The lids should be anointed from time to time with a salve of the yellow oxid of mercury (½ per cent.). A mild antiseptic nasal spray may be employed, but as the writer has not been able to satisfy himself of any causal relationship existing between the irritation of the nasal pharynx, which is present in most cases, and the conjunctivitis, he does not think any special treatment of the nose or throat necessary. The drugs which are to be employed locally will depend largely on the type of inflammation which the disease assumes; if, as is usually the case, the tarsal conjunctiva is alone affected, and the granulations have not attained great size or density, mild antiseptic washes, either of boracic acid or boracic acid and cocain (acid boracic gr. x; cocain, gr. ii to f. ℥i) or of bichlorid of mercury (1-5,000) or of dilute acetic acid (gtt. x ad. f. ℥i), should be used at frequent intervals to keep the eyes clean and freed from secretion. In addition to this, a solution of adrenalin (1-5,000) will be found not only to bring great relief to the symptoms, especially to the itching which is always so troublesome, but to exert a marked influence upon shortening the course of the disease. Weeks has found the insufflation of calomel powder on the palpebral conjunctiva in an extremely thin layer, once in every forty-eight hours, to be of service.

In cases of longer standing, where the granulations are larger, but still flat and not yet of gristly consistency, the same lotions may be continued, but more powerful alteratives should be employed, such as either a solution of corrosive sublimate (in the strength of 1-5,000); massage of the lids with an ointment of yellow oxid of mercury (2 to 4 per cent.), or the application of boroglycerid and protargol 4 per cent. Suprarenal solution with chloretone, and a solution of formaldehyd and protargol are often of value. The persistent use of weak (¼ per cent.) solutions of nitrate of silver is of service in this variety also, especially if there be much associated catarrh of the conjunctiva. If the granulations still persist, despite these remedies, recourse should be had to electrolysis or the actual cautery, but excision of the granules by the knife should not, in the opinion of the writer, be performed in this stage, for it is possible, indeed usual, for such granulations, even those of large size, to disappear wholly on the advent of cool weather, and for the conjunctiva to assume a perfectly normal appearance. It does not seem justifiable, therefore, to employ a method of treatment which might produce permanent changes in the lids and lead to troublesome complications. Cauterization of the granulations by strong acids, such as chromic, is also to be depreciated.

In the third variety of the tarsal type, that in which the granulations have become hard and gristly and are rounded, it is better to proceed at once to the removal of such granulations by surgical measures. In this type the granulations persist through the winter, though the subjective symptoms may disappear, and as they occasion a permanent thickening of the tarsus, the scar tissue which is left by their removal is less annoying and disfiguring than the presence of the granulations themselves. The removal of the granulations in this stage is not an easy matter. The roller forceps will be found useless, and it is impossible to express the contents of such a granulation, even after it has been incised; each granulation is really a dense fibrous body, and is best removed by shaving it off even with the conjunctiva by means of a very sharp knife. Massage of the conjunctiva with lanolin or with a salve of the yellow oxid of mercury (4 per cent.) should be steadily maintained after the operation, as it will be found that the granulations will exhibit a tendency to recur; indeed, despite these local applications, repeated removals with the knife will often be necessitated. The prompt surgical intervention in this class of cases is usually followed by the greatest amelioration in the symptoms; and the ulceration of the cornea, which is not infrequent in this type, from the mechanical pressure exerted upon the cornea by the size and hardness of the granulations, may usually be prevented.

In the ocular type of inflammation, massage of the globe with the yellow oxid of mercury will cause the disappearance of the swellings in many instances, if these be but small; where the granulations are large, frequent insufflations with calomel are of service, but at times the cautery will have to be resorted to. In the associated form, a continuation of the double line of treatment just outlined may be employed, and it will be found that if the granulations on the tarsal conjunctiva be similarly attacked, the changes around the limbus will be seen to disappear *pari passu* with those on the lids.

It is of interest to note that Starr and Bennett, of Buffalo, have obtained benefit from exposure of the conjunctiva to the action of the *x*-rays.

Although few, perhaps, may be able to take advantage of the benefits which accrue from it, change of climate is of great importance; while, as already stated in an earlier paragraph, it is impossible to ascertain from the answers received to the circular letter whether there was any part of the country which exhibited an absolute immunity against the disease, there is general testimony that cases of vernal conjunctivitis get well quicker in a high, dry, cool climate than under any other conditions. Thus patients do better in the mountains than at the seashore. Though it should be mentioned in this connection that Kipp has found that an ocean voyage removes annoying symptoms.

NOTE.—The complete bibliography of vernal conjunctivitis may be found in the article by Terson appearing in *La Gaz. des Hopitaux*, July, 1898, and in the monograph by Danvers, entitled "Spring Catarrh of the Eyes," and published by J. Bale, London, 1901.

DISCUSSION.

DR. JOHN E. WEEKS, New York—I have seen a comparatively large number of cases of this kind, the percentage being greater in the last few years in proportion to the number of cases of eye disease. It is a curious fact in my experience that these cases have occurred among the well-to-do in a proportionately larger percentage than in those whose hygienic surroundings have been less favorable. Children who live in the city during the winter and go to some country home in the summer are those who have furnished the largest number of cases. In my experience children under the age of 3 years seldom present this condition, and I do not think that I have ever seen the onset of the disease after the age of 25 years. I have, however, observed the results of this condition and a continuation of it in adults up to the age of 45 or 50 years.

The striking feature in this disease is the variability in the length of time during which it persists. I have observed it in children from whom it has entirely disappeared after the third summer. I have observed it in other cases in which its recurrence has been noted for at least eighteen years.

There does not seem to be any particular predisposition on the part of the individual to contract the disease; it occurs in the robust equally as often as in those who show evidence of relatively poor nutrition. In regard to locality, I have observed it in those who live near the seashore as well as those who live inland.

In regard to the cause of the disease, I have nothing to offer. It presents many of the qualities of an infectious nature. I have not as yet been able to discover any proof of contagion. I have, however, from time to time, observed it affecting two or three children in one family, but have never observed it in the form of an epidemic. In regard to the comparative frequency with which it affects the sexes, I have seen it more often in males. Terson (*Annales d'oculistique*, November, 1902) states that in the cases that he observed 85 per cent. were in males.

The disease affects both eyes almost without exception. I have seen involvement of the cornea in some cases, particularly those in which vegetations occur.

As to pathology: vernal conjunctivitis differs from trachoma in that the retrotarsal fold never presents vegetations; in fact, it does not appear to be involved, if we except some slight swelling. The minute papillary elevations which occur present a character entirely different from the trachoma follicle. They may be likened to the pile of velvet, perhaps a trifle coarser and shorter. This condition persists in a modified manner throughout the months of quiescence. After some years the papillæ become more or less aggregated and form fungoid elevations. These elevations under the microscope show a condition resembling fibrous papillæ. In some the sections show a great deal of fibrous tissue, the epithelial cells dipping down into it; in others the papilliform arrangement is more marked. The fungoid masses may be very few in number, scattered over the tarsal conjunctiva of the upper lid, or they may be quite numerous and involve the tarsal conjunctiva of both lids. It is at this stage that corneal complications are prone to occur. In this and the early stage a scanty, tenacious, muco-purulent secretion is present. The hypertrophied pericorneal tissue may encroach on the cornea, leaving on subsidence an irregular, opaque annular ring which may reach 2 mm. in width. I have never seen it extend over the entire cornea.

In the treatment of this condition I have found that mild measures serve best. Bathing the eyes with a warm solution of boric acid twice daily and the introduction of a 1 to 1.5 per cent. ointment of the yellow oxid of mercury into the eye once daily, at night, serve to reduce the inflammatory phenomena and to bring about a favorable condition. It has also been my habit to dust calomel on the conjunctival surface after everting the lids, perhaps every second day, putting on a very thin layer of calomel. The fungoid masses may be excised, but they are pretty sure to return in a very short time. However, if they are causing much irritation to the cornea, they should be excised. An attempt to change somewhat the nutrition of the conjunctiva by compressing it between the blades of trachoma forceps is sometimes of service. On the whole, however, mild treatment results in the greatest good to the patient. In regard to the use of cocain, I would say that in my hands it has not been beneficial. The congestion that follows often prolongs the disease.

DR. HENRY DICKSON BRUNS, New Orleans—In our clinics in this city I have had a good opportunity of comparing diseases of the eye as they exist in the white and negro races. I have just finished the study of 17,000 odd cases, of which 36 per cent. were negroes. Now the point I would like to dwell on is this: I have long paid especial attention to phlyctenular ophthalmia because of its frequency in the negro. The negro is often blinded by the disease, a condition that I have never seen in a white patient. I believe that the elevated ring appearing around the cornea and to a certain extent resembling that seen in spring catarrh, is a phlyctenular phenomenon. I have observed every possible transition type and every possible variety of infiltration. The transient nature of the disease, the readiness with which it seems to yield to simple treatment, is notable; the local application of mercury and internal administration of small doses together with keeping the conjunctiva clean suffice to bring about a cure in a very short time. I have never seen the disease last more than three or four months. If you evert the lid and look for changes you find a conjunctiva smooth, natural and not injected. This is not spring catarrh.

DR. H. GRADLE, Chicago—As far as I am aware, this disease had been described only as circumcorneal tumefaction with occasional changes in the conjunctiva of the lids until I called attention in 1884 to the disease limited to the lids without lesion around the cornea. Among some 35 cases seen in Chicago I have found the circumcorneal lesion but twice.

The changes in the conjunctiva are progressive and increase from year to year. During the earlier years they disappear entirely in the winter. Later on both the lesions and the subjective symptoms may not cease entirely during the cold season although invariably they diminish in severity. I believe I was the first to point out the analogy between spring catarrh and hay fever, both being limited to the warm season and to certain geographical regions. The patient with spring catarrh finds relief as soon as he visits a locality exempt from hay fever. I have seen, however, but one instance of coexistence of spring catarrh and hay fever in the same patient.

May has described the combined occurrence of spring catarrh and trachoma. Personally, I have never seen such a combination. As far as I have seen and learned, a radical distinction between spring catarrh and trachoma is the absolute exemption of the cornea in the former disease. As a rule, too, it is not impossible to distinguish the conjunctival lesions of the two diseases, independently of the history.

In the past two years I have seen at least three instances of conjunctival disease resembling advanced spring catarrh, but without the characteristic periodicity of that disease. These three were all recent affections according to the statements of the patients but nevertheless they continued with but little abatement after the cold weather had begun. Since close inspection of the conjunctiva excluded trachoma absolutely there has been some doubt in my mind about the diagnosis. These patients, however, were finally cured by the continued use of a suprarenal solution of adrenalin, with the addition of chloretone (0.5 per cent.). In one the lesions and symptoms ceased gradually during the winter. In two others (and perhaps a fourth) the disease subsided gradually during the following warm season on continuing more steadily the same treatment.

Dr. William Zentmayer, Philadelphia—I desire to corroborate the observations of Dr. Posey regarding the classification of Dr. Burnett. I have long regarded that clinical picture as a racial type of phlyctenular conjunctivitis. To my mind, in vernal catarrh the most characteristic subjective symptom is itching and objective symptom, non involvement of the fornix conjunctiva.

Dr. A. R. Baker, Cleveland, Ohio—I would like to ask Dr. Posey to detail more fully the diagnostic features of this disease. In my practice I seldom if ever make a diagnosis of vernal catarrh. Either we do not have the disease in Cleveland or else I do not recognize it as such. If you call phlyctenular conjunctivitis "vernal catarrh," of course, we have lots of it, but I have not seen such cases as have been described as occurring in Switzerland and in Vienna.

Dr. Hiram Woods, Baltimore—I would like to ask about the pathology of the corneal complications in this disease. In Baltimore we see almost exclusively the variety which Dr. Bruns has described. In two cases under my care there have been corneal complications. It was specially noticeable that while the eyes presented appearances of acute inflammation, there was entire absence of the so-called corneal symptoms, photophobia, lacrymation, etc. Yet there was a peripheral ring of corneal opacity, partly hidden in one case by the swollen conjunctival tissue at the limbus. But for the presence of the acute conjunctival inflammation, one would have thought he was studying a cicatrized annular ulcer. With this absence of corneal symptoms it is improbable that we have acute keratitis. Still, the corneal changes are transient and can hardly be regarded as degenerative.

Dr. M. D. Stevenson, Akron, Ohio—The observation has recently been made that by passing a metallic or glass rod over the conjunctiva itching in the one case or painful sensation in the other would be developed, thus differentiating between vernal catarrh and trachoma. I have sometimes observed the contrary, and consider this statement of little value.

As to the treatment, I would like to mention the use of the x-ray. Dr. Smith of Warren, Ohio, has told me of some cases he had treated between the paroxysms of the disease with the x-ray with very great benefit. In one case he treated the lid that was most affected, and while its appearance changed but slightly, it did not become inflamed with the beginning of warm weather, while the lid of the other eye did.

Vernal conjunctivitis affects the palpebral conjunctiva chiefly and is often confined to the lids, but seldom to the limbus. True phlyctenulæ in phlyctenular conjunctivitis, on the other hand, are nearly always confined to the conjunctiva of the eyeball. I consider these two diseases entirely distinct and that, although not always easy to differentiate from one another, they are usually quite unlike in course and history.

Dr. Louis Strickler, Cincinnati—I would like to endorse what Dr. Bruns has said. I have had much difficulty in making a diagnosis of vernal catarrh, and have restricted the diagnosis to disease of the palpebral conjunctiva, and when I have found it to be a disease of the ocular conjunctiva I have put it down as phlyctenular conjunctivitis, and I treat these cases by internal medication only, with no local applications. I look on it as a peripheral neuritis, a result of toxemia from the intestinal tract. I do not believe there is a vernal catarrh of the ocular conjunctiva.

Dr. Harold Gifford, Omaha—It seems unfortunate that there is a tendency to confound ocular vernal conjunctivitis with phlyctenular conjunctivitis. They are as distinct as they can be. As to its occurrence in the negro, I think Dr. Bruns said he had never seen a case in a negro, is that correct?

Dr. Bruns—Yes.

Dr. Gifford—I have seen it in a perfectly characteristic form in two negro girls. There was no question of its being phlyctenular conjunctivitis, although the severe forms of phlyctenular conjunctivitis are common in negroes in our vicinity, as Dr. Bruns says.

In regard to the time it occurs, I think we are sometimes mistaken as to its occurring in life, being led to that idea by defective history on the part of the patient. I have seen the trouble crop out after many years of apparent freedom from it in patients I just happened to know had it when 8 to 12 years old. We sometimes see mild forms in children, which fade away, but during a very hot season crop out again, developing perfectly characteristic symptoms.

Another point is in regard to the one-sided cases. I think they are like the one-sided cases of trachoma, cases where they have had it in both eyes and have gotten over it in one. I have followed one such case, where a boy of 5 came to me with vernal catarrh of both eyes. I lost track of him, and after five years he came back with one eye practically normal and in the other a severe form of palpebral vernal conjunctivitis, as severe as I have ever seen. In this case vision was reduced to 20/200 in the affected eye, and, although it would improve under treatment, it would go back with sight greatly reduced, and finally I excised the conjunctiva of the upper lid and replaced it with an epithelial lip flap. I think that is the only successful operative treatment.

Dr. J. H. Claiborne, Jr., New York—I think I can array myself on the side of those who have seen vernal catarrh. I have never seen it in the negro, however, although I lived in the south before going to New York. I have seen it in New York City. We find it often in cases of good standing in life rather than in the lower classes, and I know of several cases where it repeats itself every year, and where it is restricted to the ocular and not to the palpebral conjunctiva. I have had the best results with the use of nitrate of silver and atropin and adrenalin combined. I should like very much to see the type Dr. Bruns refers to, and will certainly avail myself of the opportunity if I may.

Dr. Robert L. Randolph, Baltimore—In regard to the treatment, some five years ago I thought I had discovered what was almost a specific in the use of strong ointment of salicylic acid but since reporting five cases I have seen two in which it failed. I start with an ointment of 1 per cent. and increase it up to as much as 80 grains to the ounce, or 16 per cent. In the cases of my original report the vegetations were pronounced on the upper lids, and I found with the use of the strong ointment that the vegetations disappeared, leaving a clean conjunctiva. I have since then, however, met with a case in which the ointment had no effect whatever. It seems to be a trustworthy treatment in the cases of ocular vernal catarrh, but less so in the palpebral form. I have never entertained the idea for a moment that the disease was of bacterial origin.

Dr. E. P. Morrow, Canton, Ohio—Dr. Baker spoke of never seeing these cases of vernal catarrh. I have seen a number of cases and am only sixty-three miles south of him. In treatment, the salicylic acid ointment, just spoken of by Dr. Randolph, has given me the best results. The strength I have used has been from 5 to 10 grains to the ounce. The intense itching complained of by these patients is entirely relieved by the application of ice cloths, the method of applying them being the same as employed in purulent conjunctivitis. I believe that this tends also to shorten the disease.

Dr. Wm. Campbell Posey, Philadelphia—As to the occurrence of the disease in different parts of the United States: Men who have lived in Maine many years have told me that they had never seen a case there, and I have had an opportunity of personally observing that one case at least who presented very marked symptoms in Philadelphia was immediately benefited by a change of residence to Mt. Desert Island.

It is only in the cases where there are the hard, rounded granulations on the lids that the diagnosis is difficult, and in those the absence of pannus and the history will generally suffice to differentiate them from trachoma. I have observed a number of cases of vernal conjunctivitis in negroes, both of the palpebral and ocular forms, but I believe that most of the cases referred to by Burnett are of phlyctenular origin. In conclusion, I would like to call attention to the employment of the *x*-rays in the treatment of vernal conjunctivitis, especially since I have just received a letter from Dr. Bennett of Buffalo, in which he states he has had most excellent results in one case from this method.

Clinical Report.

A CONGENITAL SACRAL TUMOR.

RICHARD T. HENDERSON, M.D.

URBANA, OHIO.

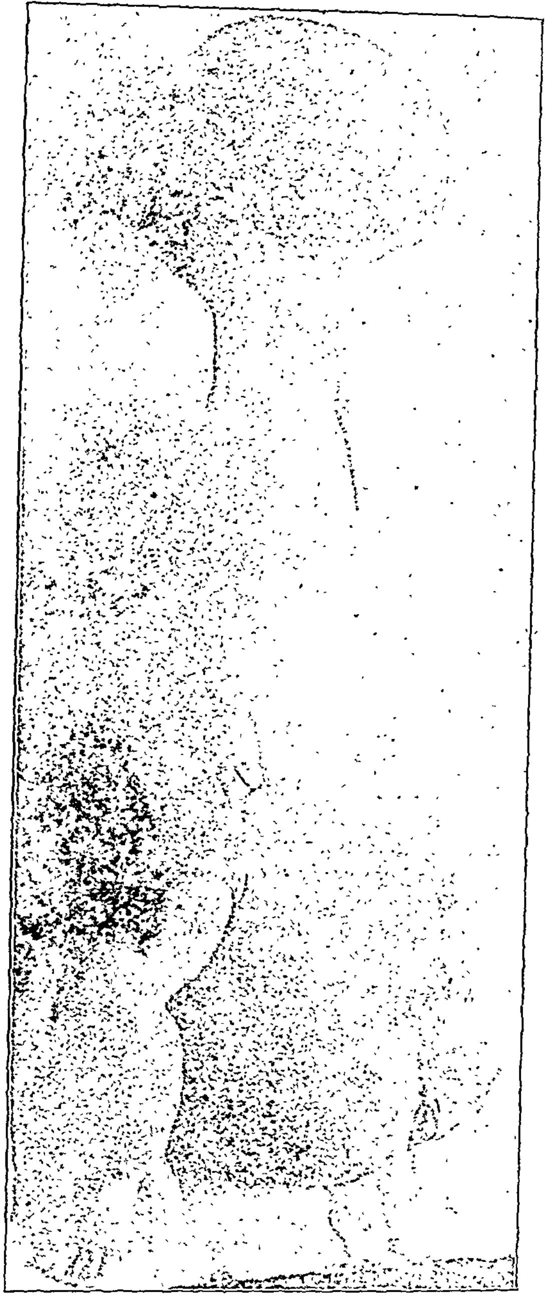
History.—I was called, April 10, 1903, to see Mrs. L., a medium-sized woman, apparently healthy, aged 30. She was the mother of two children, the younger being 2 years old; she had never had any sickness since the diseases of childhood. Her family history was good. She was at about the seventh month of gestation.

Examination.—Her excessive abdominal enlargement was double that of any woman I had ever seen at full term. Palpation was impossible, as the slightest pressure caused excruciating pain. She was unable to assume the recumbent position owing to dyspnea.

Labor.—After being called once by a false alarm, I found her in labor April 20, the contractions being short and of not much force, though she said she had been in labor for five hours. Dilatation had taken place to the size of a silver dollar. Three hours later there was more dilatation. The contractions, however, seemed to be on the wane, though the woman was not in the least exhausted. After twelve hours of labor, the contractions becoming weaker and weaker and the intermissions more and more prolonged, I ruptured the membranes. A flood of water, at least five pints, passed at once. With a few strong contractions the head was now born, with the cord wrapped around the babe's neck. There everything stopped. After loosening the cord (in which I found no pulsation) I waited one-half hour for a return of contractions, but as none occurred, I began gentle traction. This caused such agony that I was forced to desist. I anesthetized her completely and easily delivered the shoulders, but was unable to accomplish anything further. I introduced my hand and found what I took to be the buttocks of another child, but was soon surprised to find this mass firmly attached to the buttocks of the half-born babe. I then drew down both feet and began traction. After fully thirty minutes' traction the tumor was delivered, followed by a quart of water. The third stage was normal.

The tumor was located on the sacrum and coccyx, and was 18½ inches in circumference.

The woman rallied slowly, then did very well for six days. On the sixth day she had a chill and a temperature of 106.



After treatment by the administration of quinin and by vaginal and intrauterine irrigation the temperature returned to normal and the patient recovered her usual health.

The County Society the Unit.—A year's work under its new constitution and by-laws has shown where certain changes are imperatively necessary to the proper and successful carrying out of the society's work in harmony with the American Medical Association. The existence of "members at large" is in conflict with the spirit, if not, indeed, with the law of the A. M. A., and all such "members at large" should be obliged to join their county societies. It is the county society that is the fundamental unit of organization—properly so—and all licensed and reputable physicians should belong to this fundamental organization. Anything other than this would be as inconsistent as permitting a man becoming a member of the Knights Templars without being a member of a "blue lodge." The illustration cited is further apropos, for the whole plan of reorganization of the A. M. A. is merely an adoption of the general fraternal society plan. Therefore, we would say to all members at large, "Join your county society, or the county society nearest to your home, if there is none in your own county."—*California State Jour. of Med.*

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THE ETIOLOGY OF SYPHILIS.

It requires but the briefest survey of the literature of syphilis to realize the stupendous amount of work that has been done for half a century in searching for a microbic cause of the disease. It seems as if most of the individuals who have begun the search succeeded in finding a microbe, and under the force of enthusiasm, rather than of satisfactory proof, many have claimed the rôle of specific etiology for their organism.

The name of Donné is one of the first, if not the first, to be associated with the microbic etiology of syphilis, but this was more or less unintentional on his part, apparently, as his partisans state that he did not believe certain organisms he found in the discharges of syphilitics were the cause of the disease. His work was published in 1837. No noteworthy contribution to the subject was made until 1869, when Hallin claimed that a micrococcus which he found constantly in the blood of syphilitics caused the disease. This was a queer organism. It was found in the red blood cells, which became enlarged and vacuolated as a consequence of the invasion, and after a time they acquired ciliary elongations. It will be remembered that a few years ago Arnold described a number of morphologic peculiarities which develop in red blood cells as a result of standing. Hallin's observations in syphilis probably concerned some such artefact. In the same year Klotzsch found certain "spores" in the blood and skin lesions and cultivated them in broth; but his cultures were not taken in the light of confirmatory evidence by his contemporaries.

The "crypta syphilitica" of Salisbury and Brühlkens, which was published in 1870, was followed shortly by two discoveries of meteor-like career. Klebs, in 1870, described a remarkable organism, cultivated from syphilitic lesions, which was capable of growing either as a coccus or a bacillus, and often in peculiar and characteristic masses. It would seem probable that he had a mixed culture. However, he succeeded, to his satisfaction, in conveying syphilis to monkeys by inoculating this culture. He also infected monkeys with syphilis by direct transplantation of chancres. Then Lostorfer held the attention of medical scientists for some months with his "corpuscles of syphilis." They were seen to develop in syphilitic blood which had been kept for a few days in a moist chamber. There seems to have been an interesting sitting of the Wiener Medicinische Gesellschaft at this time, when Lostorfer volunteered to base the diagnosis of syphilis on an examination of the blood. The opportunity was given him, and he is said to have arrived at the differential diagnosis with considerable exactness in this way. But soon other observers found the same "corpuscles" in the blood in health and in various diseases, and the conclusion was reached that they were disintegration products, "granules of paraglobulin," as one writer said.

There appear to have been some equally successful observers in America at this time. Bermann of Baltimore had found bacilli and micrococci similar to those of Klebs, in the sections of the tissues, particularly in the vessels. Some critics believed he was studying intravascular fibrin. Then there was the dramatic demonstration of the fungus of syphilis by Cutter of Boston at a meeting of the American Medical Association held in Chicago in 1878. He found mycelium in the chancres by the use of a 1/50th and a 1/75th objective lens.

In 1881 Aufrecht found a micrococcus or a diplococcus in papular lesions, and Obraszow a similar organism in lymph glands. The findings of Birch-Hirschfeld, also of Peschel, in 1882, differed little from some previous observations. They found groups of cocci in all gummatous tumors except those which were cicatricial, in mucous patches, papules, and in indurated chancre. The best results were obtained by a study of fresh tissues in either acetic acid or potassium hydrate. Those who have used these solutions in the study of fresh tissues will recognize how closely various granules may simulate cocci. In the same year the results of Martineau were published. He introduced hogs into the experimental study of syphilis, claiming to have transferred the disease to them by inoculating cultures of hard chancres. These cultures were made by placing the chancre in a liquid medium at brood-oven temperature, a growth of micrococci resulting. The overlying liquid was used in the inoculations. The hogs underwent a papular eruption and the microbes could again be cultivated from the blood; they resembled somewhat those described by Klebs. He also gave monkeys a hard chancre on the prepuce which was followed in time by a characteristic papular eruption. Many others since then have obtained micrococci from syphilitic lesions, but there were also published valuable negative results, especially by Köbner (1883) and Neumann (1883), who failed utterly in the attempt to inoculate animals with syphilis.

Of all the micro-organisms observed or described in syphilis the bacillus of Lustgarten (1884) has been accorded the most favorable reception up to the present time. It will be remembered that this organism resembles the tubercle bacillus in morphology and staining properties, but is more easily decolorized by acids. He found it in small numbers in the primary sores and in internal organs in all of sixteen cases examined. It has never been cultivated artificially. Confirmatory work on this organism was undertaken by several observers. De Michele and Radice found it in forty-five out of sixty-four cases examined. It seems that Doutrelepont and Schutz had carried on studies contemporaneously with Lustgarten and shortly after the latter's report described an organism resembling or identical with the Lustgarten bacillus (1885). It was found in two initial scleroses, two broad condylomata, a papule from the chin and a gumma. It occurred singly or in small groups especially at the periphery of lesions, but often many sections contained no organisms.

De Giacomi and also Gottstein (1885) were able to demonstrate the Lustgarten bacillus in a number of cases in both initial scleroses and gummata, and offered some improvements in the staining methods. Many others have been unable to find the organism, notably Sabouraud (1892), who after a study of twenty cases concluded Lustgarten had found only a pretty stain for the tubercle bacillus. This may not have been entirely just to Lustgarten.

More recently interest in the etiology of syphilis has revived. V. Niessen since 1898 has been publishing assiduously descriptions of his organism and his animal inoculations. As this is a pleomorphous organism, usually a streptobacillus, he is willing to concede that Klebs, Lustgarten and others may have seen one or another of its forms. It stains by Gram's method, is easily decolorized by acids, has endospores, and is found in all lesions and in the blood in all stages of syphilis, and it is supposed under no other conditions. He has been able to cultivate it, to produce syphilis in rabbits by injecting the culture, even to the extent of causing hereditary syphilis (abortion). The bacillus was found in the fetal lungs, and a papular eruption and ulcerated buttocks were present! Since the organism was present in all stages of the disease he concluded that syphilis is absolutely incurable. V. Niessen has met a great deal of ridicule among the Germans.

In 1901 de Lille and Julien cultivated a Gram-staining bacillus from the blood which was pathogenic for guinea-pigs and frogs and was agglutinated by the serum of syphilitics. The hog has been used for inoculation with syphilitic blood and excretions especially by Adrian and by Hügel and Holzhauser, and they claimed to have caused a generalized papular eruption which appeared about four weeks after the inoculation.

Joseph and Piorkowski have attacked the subject in a novel way. Since it seems probable that the sperm of syphilitics may infect a woman and convey syphilis to offspring, they concluded to study the sperm bacteriologically. They thought also that placental tissue might logically be a good culture medium. This was accordingly inoculated with the sperm of syphilitics and with that of healthy men as controls. Subtracting everything that was considered contamination, they centered their attention on certain clear colonies made up of a motile bacillus having the morphology of the diphtheria bacillus and the size of the subtilis bacillus. It stains by Gram's method, is not acid-proof and degenerates soon, with the formation of metachromatic granules. It has since been cultivated on various ordinary media. The positive findings occurred in about forty cases in stages varying from five weeks to five years of the disease, and was absent in the sperm of fifteen normal cases; positive results were secured also in twenty-seven hard chancres, in papules, mucous patches and other lesions. No satisfactory animal experiments have been obtained.

The medical profession appeared to have been little impressed with the protozoic cause which Max Schüller discovered about two years ago. He incubated syphilitic tissue and found the development of bodies resembling protozoa, which some German critics considered cork cells. The fact that he found similar "organisms" in carcinoma and sarcoma added no strength to his theory.

We may say that now we are confronted with the bacillary theory of syphilis, in contradistinction to the micrococcus theory which prevailed in previous years. It appears probable that several recent observers have been studying the same bacillus, particularly would this seem true in regard to the Gram-staining organism. And one may say that circumstantial evidence against this form of organism is accumulating rather formidably. But unfortunately confidence is often lessened in the work published because of hasty conclusions on the part of the investigators. A papular eruption in a hog or rabbit is surely not easy of recognition, and it is possible that many organisms may be able to produce it. And there are perhaps many organisms which would cause a rabbit to abort, as any infectious disease might; and excoriations on the buttocks of an immature, thin-skinned, fetal rabbit may have many explanations. Moreover, it does not follow that the specific germ for syphilis would be pathogenic for animals in the same way as in man. In pathology there are many instances where this is illustrated. Then the agglutination test for specificity of an organism can not be relied on unless it is most carefully controlled by experiments with normal serum.

In this day of rapid scientific progression, it is not to be forgotten that with new methods of differentiation, new burdens of proof have to be met.

INFANTILE HYPERTROPHIC STENOSIS OF THE PYLORUS.

The increasing number of reports of this disease, the contentions over its surgical or medical treatment and opposing views as to its nature and cause, it is to be hoped, will soon lead to a few careful and thorough anatomic studies. The earlier conception of its fundamental congenital genesis, at least for the majority of cases, has been abandoned; this is mainly due to the absence of symptoms for varying periods after birth. In the 23 cases collected by Pritchard in 1900 there were some in which symptoms were not observed until the infants were several months old. The absence of any reports of increased connective tissue in the histologic studies of the hypertrophied pylorus is also to some extent opposed to the intrauterine development of the condition. In a small number of cases, a prenatal stenosis at the pylorus may occur, as it does in other parts of the alimentary canal, e. g., imperforate anus or ileocecal valve.

There are reasons for believing that the name of the affection might with advantage undergo further modification—the designation congenital having been dropped—since it is altogether likely that the obstruction of the pylorus is but one phase of a series of events and does not primarily cause either the repeated emesis or the final death. Numerous instances of stenosis of the pylorus are recorded in adults; the observation by Landerer of a stenosis, the passage way measuring only 2 mm., in a man who lived to the age of 45, is a notable example. In a number of the cases reported of stenosis in infants, the obstruction was not as marked.

There are certain difficulties confronting investigation of the infantile hypertrophic stenosis; for instance, there is at present no means of determining whether, at the time of fixation of the specimen, unstriped muscle fibers are in a condition of contraction or relaxation; in consequence, those who maintain that the obstruction of the pyloric orifice is caused by tonic spasm are unable to find in the microscopic examination anything to refute or confirm such an idea. Accurate measurements of the infantile pylorus, its caliber, and the thickness of various coats, at different periods of development, are also wanting.

The anatomic change in the specimens examined is a remarkable hypertrophy of the layer of circular fibers. Whether this hypertrophy is only apparent and caused by "systole," as is urged by Pfaundler and others, or whether it is real and secondary to prolonged contractions, remains to be determined. In some instances the stenosis has disappeared with the pressure of a column of water of a certain height, implying thereby a condition unassociated with organic disease.

One direction research should take is the careful examination of the nervous system of these infants, for it is to be remembered that Yzeren was able to produce forcible and prolonged contraction of the pylorus and adjacent region in dogs and rabbits by section of the vagi. That alterations in the innervation of the stomach may be responsible for this disease of nurslings has occurred to more than one observer; examination of the nervous system, so far as we know, has not been made. Degenerative changes in the vagi, or their nuclei of origin, and consequent lessening of their inhibitory action, might result in spasm to which hypertrophy was secondary.

The number of reported cases is now over 50; two or three years ago it was half that number; of the 50, 20 have been operated on, with eight deaths. Pylorectomy, pyloroplasty, dilatation of the pylorus (Loreta's operation) and gastroenterostomy have all been performed, the last two with greatest frequency. The difficulty and high mortality attending and following surgical intervention are discouraging, and, on the other hand, good results are reported from attention to the diet. The presence of free HCl in the gastric juice, as determined by Knöpfelmacher and in a number of cases recently by Freund,[1] with their recommendation that cow's milk, raw or skimmed, be given to counteract this, also point to the eventual removal of the affection from the domain of surgery.

SUICIDES OF PHYSICIANS AND THE REASONS.

Incited by a cable dispatch from London announcing a great increase of suicides among physicians in Great Britain, the Chicago *Tribune* reviews the records for the United States, and finds for the past twelve and one-half years that a total of 519 physicians have committed self-murder. The average annual number is about 41, which has been exceeded six times in twelve years. The smallest number was 23, in 1891, while the largest number was 53, in 1893, a time, by the way, of great financial depression. A record for the first six months of 1903 indicates that the present year will probably be up to the average. The above figures, while not indicating such an increase as is reported from abroad, are sufficiently formidable as they are; they far exceed the average ratio of suicides in the general population, in this country at least, and are suggestive in many ways. In Great Britain the cause of the increase is attributed largely to depreciation of income. They suffer there from overcrowding of the profession, competition with quacks and the exploitation of the medical profession by workingmen's clubs, which has become a standing theme in our English contemporaries. In this country we have the trouble of overcrowding to even a greater extent, for here we have twice the number of physicians in proportion to the population as in Great Britain. Moreover, the world is getting healthier, and this healthfulness, again, is largely due to the labors of physicians, who are the only ones that work against their own interests continuously. Mainly through their efforts morbidity is greatly decreased and the professional income of the physician is also diminished.

We have here, moreover, greater competition with quacks and all aberrant sects, like Eddyism, Dowieism and others than do our confrères abroad, and we are annually educating, as Dr. Billings has shown, about twice the number that is required to fill the naturally occurring vacancies in the profession. It is not remarkable, in considering these facts, that failures must occur, that many of our professional brethren have to drop out of the profession in one way or another, and that weaklings, those morbidly disposed, and those lacking in high principles and moral inhibitions, might very easily adopt suicide as the most direct way to end their troubles. That more do not do this we think speaks well for the profession, both here and elsewhere.

Another reason suggested is that the physician is familiar with death in all its forms, and always has the means of suicide at hand. This is also probably worthy of consideration in connection with the materialistic tendencies which, we think, exist too much among us.

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[1] Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1903, xi, 309.

It is not a bad thing to be reminded of unpleasant facts, if by such reminders any influence whatever is exerted toward doing away with the evils that exist. If we know that physicians are disproportionately given to suicide under the stress of modern life, while other professions also suffering from overcrowding are not, it is well to look for the reasons. The real main factor is, we believe, the business negligence of the profession as a whole. It does not look out for its own interests as it might very properly do without in the least disregarding the interests of the public. With proper organization and regulation, which is now, we believe, fairly well inaugurated, though far from being perfected, there will be less reason, we trust, in the future than there has been in the past for suicide among physicians.

THE STRIKE FEVER.

An Indiana official has, according to newspaper reports, diagnosed the cause of the present epidemic of strikes as due to a bacillus. As far as its prevalence and apparent contagion goes, it would seem to be a rational conclusion that there is some sort of morbid virus or germ extant that produces the present outrageous condition of things. The extirpation of this particular germ, however, is a sociologic problem, not a medical one, except in so far as the mental condition of the strikers at the present time is a psychologic phenomenon that deserves some attention by the psychiatrist. There is no question, however, that if the present febrile movement continues there will be some complications calling for medical treatment. The enforced idleness of a large number of working people and their consequent financial embarrassment, will have much to do in depreciating their bodily welfare, and in causing impairment of natural immunity. Should the "epidemic" go further, the public at large will suffer. Great sociologic injury may easily result from extensive stagnation of manufacturing and other occupations, and the financial condition of the country may thus be seriously interfered with. These results are an interesting matter for study, both in their influence on present pathologic conditions of the laboring classes and on the people as a whole.

THE YELLOW FEVER ORGANISM.

Within the past two or three years the number of the animal parasites known or suspected to be the cause of disease has been notably increased, and if the extension of our knowledge in this direction continues at the same rate, we may have to modify our terminology to some extent, and instead of the name "bacteriology" as a branch of medical science, use some more comprehensive term. One of the latest additions to the list is the *Myxococcidium stegomyiæ,* which Drs. Parker, Beyer and Pothier[1] of the Public Health and Marine-Hospital Service find as a regular denizen of the yellow fever contaminated mosquito. It is true that not all the steps necessary to positively assure us of the etiologic importance of this organism in yellow fever have yet been taken, or at least, if taken, have not been published, but it has a respectable—if that be the word—standing on the suspected list. We can hope at least that it will be determinately ascertained to be the cause of this tropical scourge, and that by the further study of all its life history we can in time exact a still more efficient control over the disorder. It is something to know, or even reasonably suspect, who are our enemies, and be able to act accordingly. The authors make no claim to the discovery of the genuine organism, though they evidently are not unwilling to call attention to the fact that their discovery strongly points that way. There is an apparent advantage in the study of these pathogenic animal organisms over that of bacteria; we have in them a fuller life history to work out, and while specific characters are not as marked as in the higher organisms, there are more to characterize them in a biologic point of view than is the case with the lowlier vegetable forms. The field, however, is wide enough in both, and either may have its special advantages in the study of its life cycles and that of its toxic action and constituents.

RESEARCHES ON DENGUE.

In connection with the above we may say here that the catalogue of the iniquities of the mosquito is not yet exhausted. Besides its maleficent function as the transmitter of malaria and yellow fever and its general character as a pestilent nuisance, there is yet another disease of tropical and warmer temperate regions that is being credited to its mischief. The Hawaiian Board of Health has already taken action against it as a factor in the spread of dengue, and in the *Journal of Tropical Medicine,* July 1, Dr. H. Graham of Beyrouth, Syria, reports his investigations into the causation of this disease, and his conclusion derived therefrom that it is due to a protozoön conveyed and inoculated by the mosquito. He has found and studied the evolution of a parasite in the mosquito and in the blood of dengue cases that seems to him satisfactorily assured as the cause of the disease. Dengue not being a fatal or serious disorder, he found no difficulty in obtaining plenty of human subjects on whom to experiment; indeed, he says the difficulty was to select the best from the multitude who offered for the sake of the compensation paid. His experiments paralleled to some extent those of Reed and his associates with yellow fever, and though they were not so elaborate and conclusive, yet they seem, as related, to afford a very fair presumption in favor of his conclusion. The species of mosquito chiefly implicated appears to be *Culex fatigans,* but the notorious *Stegomyia fasciata,* which coexisted with it in Beyrouth and its environs where the experiments were made, is perhaps not above suspicion. The culex, however, seems pretty well convicted of being a harborer of the germ. Experiments were also made with inoculation of the salivary glands of this species, carefully dissected out and mixed with a warm sterilized normal peptonized saline solution. These inoculations produced an attack in every way similar to dengue, but so severe that he desisted from further experiments in this line. It would seem that in this way a particular concentration of the virus was obtained. Dengue organisms were found in the blood of the patient, thus removing the suspicion of septicemia in the case. If Graham's findings are confirmed in other parts of the world where dengue abounds, and the special variety or varieties of mosquitoes accurately determined, it will be another victory for preventive medicine over a most annoying, if not actually dangerous, affection.

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[1] Report of Working Party No. 1, Yellow Fever Institute, Public Health and Marine Hospital Service, Washington, 1903.

Medical News.

ILLINOIS

Personal.—Dr Herman A White, St *Charles* will sail for Europe August 1.

State Officials Enjoined.—Joseph Hanreddy, the lowest and an unsuccessful bidder for the contract to erect eight cottages at the Illinois Hospital for the Incurable Insane, at Bartonville, has filed a bill asking an injunction against the state auditor, the trustees of the hospital and the contractor, alleging fraud in the awarding of the contract.

Chicago.

Vaccination and Smallpox.—Of the 311 cases of smallpox which have come under observation and treatment in Chicago this year, only 39 showed any evidence of vaccination whatever, and not one of these had a recent, protective vaccinal mark, they were all adults who either showed marks of vaccination in childhood, never revaccinated, or doubtful, non characteristic scars, as of burns or other injuries.

Personal.—Dr. N Senn is taking his vacation in the west. He went by way of Rock Springs, Wyo., where he was the guest of Dr. R Harvey Reed, to the Yellowstone Park, and from there will visit the Yosemite Valley.——Dr Julius Grinker has returned from Europe.——Dr George W Newton and family sailed for Europe July 18.——Dr Stanton A Friedberg sailed for Europe July 17.——Dr and Mrs William Cuthbertson have returned from their European tour.

Less Contagious Disease.—Only 57 cases of the contagious diseases—diphtheria, measles scarlet fever smallpox, etc.—were reported during the week ended July 18. This is the lowest number since September, 1901. In the corresponding week last year there were 119, and the 34 cases of diphtheria and 14 cases of scarlet fever reported this week are one third and one half less than the respective number reported during the previous week. Measles, which has been epidemically prevalent for many months is fast disappearing, as also is smallpox, the solitary reported case of which was that of an unvaccinated infant of 6 months.

Comparative Mortality.—During the first six months of 1903 a total of 15,201 deaths from all causes were reported giving an annual death rate of 16.24 per 1,000. This is an increase of 3,103 deaths over the number for the first six months of 1902, and an increase of 18.5 per cent in the annual rate in proportion to *population*. Of the causes of death showing the greatest rate of increase were typhoid fever, 154 per cent., scarlet fever, 147 per cent., measles, 136 per cent., pneumonia, 60 per cent., Bright's disease 58 per cent., acute intestinal diseases, 29 per cent.; suicide, 24 per cent.; consumption, 17 per cent., heart diseases, 14 per cent. Pneumonia caused 3,133 deaths in these six months, as against 1,961 in the first six months of last year, and consumption 1,561 and 1,325 respectively.

MARYLAND.

Baltimore.

Doctors Indicted.—Drs Robert X Giering and Anna Giering were indicted by the grand jury, July 15, on the charge of publishing improper matter in a medical book. The former gave $300 bail, the latter is said to be out of the city.

Deaths of Last Week.—There were 124 deaths of children under 5 last week. This was nearly one half the entire mortality, which was 251, equivalent to an annual rate of 23.41 per 1,000. There were 60 deaths from cholera infantum, and 4 each from typhoid fever and sunstroke. Consumption and pneumonia caused respectively 19 and 12 deaths.

Faculty Changes.—The following changes have been made in the faculty of the Maryland Medical College. Dr George B Scholl, associate professor of pathology and bacteriology; Dr. Gustavus Dohme demonstrator of chemistry: Dr Clarence P. Erkenbrack lecturer on osteology, and Dr Wilbur M Pearce, clinical professor of diseases of children and physical diagnosis.

Personal.—Dr Eugene F. Cordell has resigned the chair of practice in the Woman's Medical College and has accepted the honorary professorship of history of medicine in the University of Maryland.——Dr. N. G. Keirle, Jr., has resigned his position as resident physician of the Hebrew Hospital and will go abroad in August to study the Pasteur treatment.——Drs. Ridgely B. Warfield, Harry Friedenwald and Thomas R Brown have gone to Europe.——Dr. Hunter Robb sailed for Antwerp, July 18.——Dr. Joseph E Evans, Merion, S C, has been appointed to the Marine Hospital Service and assigned to duty at the Marine Hospital here.——Dr. Alfred H Powell is again resident physician at Capon Springs, Va.

MASSACHUSETTS.

Goat's Milk for Babes.—There has been started in Malden, Mass., a goat farm for the production of goat's milk. The promoters expect that there will be a large demand for the milk, especially for the dietary treatment of sick babies.

Largest Class on Record.—More than 200 applicants took the examination before the State Board of Registration in Medicine, in Boston, July 14. Never before has so large a number appeared to take the examination for license to practice.

Personal.—Dr. Edward O Tabor has been elected city physician of Lowell.——Drs Ralph H Seelye and Charles P. Hooker have resigned from the staff of Mercy Hospital, Springfield; Dr Charles J. Downey has been made visiting physician, and Dr. Harvey W. Van Allen electro therapeutist to the hospital.

Free Antitoxin and Vaccine.—The law having been enacted which makes it the duty of the State Board of Health to manufacture for free distribution both diphtheria antitoxin and vaccine virus, the state bacteriologist, Dr. Theobald Smith, who will have charge of their production at the Bussey Institute, has gone to Europe to study the best methods of production there, specially in Germany.

Boston Deaths.—The report of the Boston Board of Health for the year ended Jan. 31, 1903, shows the lowest death rate ever recorded, 18.73 per 1,000, or .97 lower than the year before. The large items in this decrease were in zymotic disases, 360, in diphtheria, 128; in scarlet fever, 123. Typhoid fever caused 139 deaths. Of children under five there were 3,367 deaths, a decrease of 102. The total number of deaths for the year was 10,983.

Mortality of the Week.—With the coming of the hot weather the city's death rate, which was phenomenally lower in June, has returned to more usual conditions, and for the week ended July 18 was 18.58 per 1,000. Of infectious diseases 31 cases of diphtheria were reported, with 5 deaths; 20 of scarlet fever, with 3 deaths; 16 of typhoid fever; 23 of measles, and 34 of tuberculosis with 18 deaths. Pneumonia caused 25 deaths, and heart disease 21. The number of babies under one year who died was 52, and of children under five years, 67.

Brookline's Fight Against Mosquitoes.—Brookline's efforts to exterminate mosquitoes, which seemed so successful early in the season, have met much criticism and ridicule more recently, when the wet weather, followed by humid heat, has produced a scourge of the pests everywhere. The difficulty seems to be that a large sum of money is needed to do thorough work, and that is not available to the board of health. Steady work is being done, however, both in filling in, drainage and petrolizing. *An attempt* may be made to enforce the town ordinance which makes a pool of stagnant water wherever found a public nuisance.

MICHIGAN.

Pitcher Acquitted.—Dr Sheldon Pitcher, Detroit, charged with causing the death of a young woman by a criminal operation in September last, was acquitted, June 18, by a Recorder's Court jury.

Refuse to Register.—The State Board of Medical Registration has declined to register Dr D M Coonley, who attained some unenviable notoriety while a student at the Michigan College of Medicine, Detroit, by alleged unethical practices, and who obtained a diploma only on his signing an agreement to go out of the patent medicine business.

Personal.—Dr Elliott K Herdman, Ann Arbor, has been appointed medical inspector of schools.——Dr. Oscar L Dales has been appointed a member of the board of health of Grand Rapids, vice Dr Hugh Lupinski, deceased.——Drs John H. Neary, John W. Hoffman, William S Brownell, Moses A. Fechheimer, George W. Augustin and William P. Melody have been appointed city physicians at Detroit.

Comparative Morbidity.—For June compared with the average for June in the 10 years, 1893 1902 nephritis, scarlet fever, typhoid fever, smallpox and diphtheria were more than usually prevalent; and neuralgia, diarrhea, consumption, pleuritis, intermittent fever, remittent fever, inflammation of bowels, erysipelas, whooping cough, cholera morbus, cholera infantum, meningitis and dysentery were less than usually prevalent.

The Most Dangerous Communicable Diseases.—Meningitis was reported present during June at 3 places; whooping cough at 43 places; typhoid fever at 65 places; diphtheria at 68 places; smallpox at 107 places; scarlet fever at 109 places; measles at 113 places; and consumption at 208 places. Meningitis was reported present at 3 places less; whooping cough and typhoid fever at the same number of places; diphtheria at 9 places more; smallpox at 20 places less; scarlet fever at 22 places less; measles at 22 places less, and consumption at 12 places more, in June, than in the preceding month.

June Mortality of Michigan.—There were 2,319 deaths reported in June, corresponding to an annual death rate of 11.4 per 1,000. The number of deaths was 414 less than the previous month. There were 378 deaths of infants under 1 year, 149 deaths of children aged 1 to 4 years and 699 deaths of persons aged 65 years and over. Important causes of death were as follows: Tuberculosis, 200; typhoid fever, 22; diphtheria, 56; scarlet fever, 10; measles, 19; whooping cough, 28; pneumonia, 128; diarrhea and enteritis, under 2 years, 65; cancer, 133; accidents and violence, 164, including 23 from drowning and 2 from lightning. There was a general diminution in the mortality from the causes given, as compared with the preceding month. Five deaths were reported from smallpox, and one death from chicken-pox.

NEW YORK.

Buffalo Personals.—Dr. William H. Callahan has been appointed health officer of Chautauqua for the season.——Dr. Roswell Park has suffered a relapse from erysipelas, but is again improving.——Dr. Marcello Hartwig is still confined to his home.——Dr. Charles Cary has returned from abroad.——Dr. Joseph W. Grosvenor has been elected president of the Buffalo Academy of Medicine.

Thousands Wanted for Consumptives.—The commissioner of charities of New York city has submitted a report on the question of establishing a municipal sanitarium for consumptives at some out-of-town but accessible locality. He recommends an appropriation of $400,000 to enable the health department and the board of trustees of Bellevue and allied hospitals to proceed with the work.

June Deaths in Buffalo.—The monthly report of the department of health shows an annual death rate of 1,282 per 1,000. The principal causes of death were as follows: Consumption, 44; cerebrospinal meningitis, 4; diphtheria, 7; typhoid fever, 9; debility, 34; cancer, 35; apoplexy, 13; meningitis, 13; valvular heart disease, 24; appendicitis, 5; nephritis, 15; abortion, 1, and violence, 29. The total deaths were 406, as compared to 364 for June, 1902. The small number of deaths from typhoid fever, in view of the typhoid fever agitation for purer water, is noteworthy.

Warns Against Second Epidemic in Ithaca.—Dr. George A. Soper, New York, who was sent to Ithaca by the State Department of Health to have charge of the sanitary measures during the typhoid epidemic, has reported to the board of health that there is great danger of another epidemic resulting from the use of infected water. There are now no less than 9 persons ill with the fever, with 5 suspected cases. He had just discovered that in a residence situated near Six-Mile Creek, a man has been ill with the fever for ten days, and that in all probability the refuse germs had washed directly into the supply from which the most of the citizens get their water. The city is practically in the same danger of an epidemic as it was in February and March.

PENNSYLVANIA.

New Hospital Opened.—The new Frankford Hospital fills a great need in one of the greatest manufacturing districts of Philadelphia. Equipment of the hospital is being rapidly accomplished through the generosity of its president, Dr. J. Bruce Burns and others.

Smallpox Situation in Hand.—The new smallpox cases for the week ended July 18 numbered 24, as compared with 54 for the previous week. The health officials will not relax their activity in fighting the disease, but will continue vigorously the campaign of vaccination and other preventive measures. They have confidence that they are getting control of the situation.

Condensed Tuberculosis.—Dr. Lawrence Flick, manager of the Phipps Institute for the Prevention and Cure of Tuberculosis, is said to have determined that a comparatively small area, that east of Broad street and south of Market street, has more cases of tuberculosis than all the rest of Philadelphia. This district is teeming with foreigners, especially Italians and Russian Jews, often crowded into the filthiest tenement houses, with meager fare and less pure air.

Hospital Roof Garden.—On July 14 the new roof garden of the Philadelphia Hospital was formally opened. This roof-garden, providing the open-air life for the consumptive male inmates, was built under the direction of Director Martin. It is 30 by 200 feet, and covered with canvas, giving the appearance of a huge tent. Cots are provided for about 100 patients. Flowers and plants brighten the place. An elevator runs from the first floor to the roof. The plan is somewhat of an experiment, and a careful study of the effect of this mode of life on the consumptives is to be made.

To Prevent Tetanus.—For the week ended July 18 at least three more were added to the list of deaths from tetanus in Philadelphia, making 9 since July 4. Many deaths from the same cause are reported from Pittsburg, Reading, Harrisburg, Wilkesbarre and various points throughout the state. It is believed that the district attorney of Philadelphia will prosecute dealers who illegally sold pistols to children. The State Board of Health has instructed its committee on poisons and explosives to recommend the passage by the legislature of an act to prevent the use of toy pistols by minors.

Hospital To Be Reconstructed.—The contract has been let for $150,000 for the reconstruction of the Medico-Chirurgical College Hospital, Philadelphia. When the work is completed the building will be practically fire-proof, and the equipment will be entirely modern. The work of the hospital, now chiefly confined to emergency cases, is temporarily transferred to a series of houses nearby, owned by the institution. The college, by the will of the late Dr. Spencer Morris, formerly professor of medical jurisprudence and toxicology, bequeathed $12,250, the income of which is to be awarded annually to the member of the graduating class who received the highest general average for the degree of doctor of medicine.

Boards of Health Meet.—On July 16 the State Board of Health, with representatives of similar boards of other states, met at Marietta, Pa. Reports of inspection of the Schuylkill River were read, and some of the sources of pollution pronounced abated. Secretary Lee was instructed to file a petition with the Court of Common Pleas of Montgomery County asking for an injunction to restrain the borough of Norristown from discharging its sewage into the Schuylkill. The number of cases of smallpox for May and June in the state was 1,092, with 62 deaths, as against 1,416 cases and 61 deaths for the preceding two months. The conditions in rural districts where epidemics had prevailed were reported as much improved. Dr. Samuel T. Davis of Lancaster was re-elected president, and all the old appointees of the board were retained.

GENERAL.

Scourge of Mosquitoes in New England.—Because of the wetness of the season, there is an enormous increase of mosquitoes along the North Atlantic coast.

The Mosquito Further Indicted in Honolulu.—The Hawaiian Board of Health has decided that the mosquito is the cause or an agent in the spread of dengue which has prevailed in the territory for some months, over 1.500 cases having occurred, and will take measures for the extermination of the insects.

The Government Borax Diet Tests.—It is announced that the official report on the tests of preservatives in food, which have been carried on in the Department of Agriculture, will be ready July 29. Only borax has been administered in the food thus far. Experimentation has been suspended for the summer, and will be resumed October 1. The health of several of the men who were fed on the preserved food is said to have suffered so as to compel their withdrawal from the tests.

Yellow Fever Commission Reports.—The U. S. Commission appointed to investigate the transmission of yellow fever has reported, after six months' study, as follows:

1. That the bacteriologic examination of the blood of cases of yellow fever during life and the blood and organs at autopsy performed immediately after death in uncomplicated cases is negative.

2. That stegomyia fasciata when contaminated by feeding on a case of yellow fever forty-one and a half hours after the onset of the disease and subsequently fed on sugar and water for twenty-two days, one and a half hours, can, when permitted to feed on a non-immune individual, produce a severe attack of the disease.

3. That stegomyia fasciata, contaminated by yellow fever and after varying periods killed, sectioned and appropriately stained, presents with regularity a protozoan parasite, myxococcidium

stegomyiæ, that can be traced through a cycle of development from the gamaete to the sporozoite.

4. That stegomyia fasciata fed on blood from a case of malarial fever on normal blood or artificially fed does not harbor the parasite indicated in conclusion three.

Manila Medical Society.—A circular letter issued by this society calls attention to the fact that while it has been in existence only a little over a year, it now has a membership of nearly forty, including American, English and native physicians. The circular letter, sent to members of the profession in Manila who are not already members of the society, calls attention to the fact that it is "a field rich in opportunities from a scientific standpoint, and it is our duty to ourselves, to our colleagues in other parts of the world, and to suffering humanity to discuss these questions, and to give the world the benefits of our conclusions." Here in our own country we have the opportunities and the men to support and prepare a journal of tropical medicine, that will be the equal of any now issued." We understand it is the purpose of the society to establish such a journal in the near future.

Making Manila Healthy.—Surgeon-General O'Reilly has received a report showing a steady decrease in the death rate of the city of Manila as a result of the work of army medical officers. The death rate has decreased steadily from 46.80 per 1.000 for the first quarter of 1900 to 22.17 for the first quarter of 1903. Assistant Surgeon Munson says the improvement has been accomplished in spite of Asiatic cholera and bubonic plague and the existence of a largely unvaccinated population in the provinces. Cases of plague, cholera and smallpox have occurred in Manila during the present year, but precautions taken by the board of health have prevented an epidemic. Attention is called to the fact that the present annual mortality in Manila, 22.17 per 1.000, is lower than that of many cities not commonly regarded as unhealthful situated in the United States and elsewhere. According to Dr. Munson, the present death rate of Manila compares not unfavorably with those of San Francisco, Boston, New York, Glasgow, Paris, Vienna and Havana.

Factors in Spreading Typhoid Fever.– During 25 years, reports to the State Board of Health showed that typhoid fever existed in Michigan inversely as the depth of water in wells. Recently there has apparently been a marked change in this relation. From March 1 to June 30, 1903, the average depth of water in the observation well at Lansing has been over twice as much, and the typhoid fever over 80 per cent. more prevalent than the average for the ten years preceding. The unusual spread of typhoid fever in Michigan, notwithstanding the existence of conditions which hitherto favored its decline, may be due to several facts—such as that one circuit judge has decided that typhoid fever is not a communicable disease, dangerous to the public health, and some boards of supervisors have refused to allow bills for expenses incurred by local health officials for the care of indigent typhoid fever patients, thus practically putting a stop to local work, by health officials, for the restriction of typhoid fever in those parts of the state. In cities, especially in Menominee, typhoid fever is and has been a great factor in the mortality rate. Even the Detroit Board of Health takes no action to require reports from householders and physicians, or other measures for the restriction of this dangerous communicable disease, such as placarding of premises, disinfection of discharges, and of premises after death or recovery of patients.

CANADA.

Acid in Canned Meats.—The analysts of the Inland Revenue Department of the Canadian government at Ottawa, have just completed an analysis of 99 samples of canned meats. Of these 94 were all in good condition. One spoiled sample contained boric acid, and with this exception all the other samples were found to be in good condition. The only preservative discovered was boric acid, which was found in 21 samples. In no case did the quantity of boric acid found exceed the limit fixed by the British parliamentary commission, viz., .05 per cent., and in most cases it fell markedly below that standard.

The Medical Curriculum in Ontario.—At the beginning of the session of 1902-03 in the Ontario medical colleges considerable concern was manifested over the action of the Ontario Medical Council for last year in raising the standard of matriculation in this province. The Ontario Medical Council has just held its annual meeting in Toronto. It was a new council as the territorial elections had been held since last they met, and several of the old councilors had fallen in the battle. This matter of matriculation came up for considerable discussion, and was referred to a small select committee, which is to report on the subject next year. This will ensure full consideration of a difficult matter. For the first time in its history the council has adopted measures which permit the various medical teaching institutions to exercise their own discretion in determining the time which is to be allotted to instruction in a subject of the curriculum. That the customary action of the council on this point is abandoned is of great significance, for it will help very considerably in the project, now almost consummated, of building up one great medical faculty in Toronto.

Keeping Out Undesirable Immigrants.—The immigration policy of the Canadian government has recently been much discussed in parliament. Members of parliament have complained that the present policy does not look sharp enough after such minor diseases as lupus and trachoma; and they have insisted that the Canadian government ought to make arrangements with the government of the United States for mutual action in reference to the inspection of immigrants. The Canadian government immigration policy makes no provision to keep out criminals or paupers, with the result that many undesirable immigrants are permitted to find homes in Canada. During the season of 1902 4,986 persons were inspected at the port of Montreal by the United States officers, and of this number 2,028 were rejected. Of this number 419 were rejected because they were contract laborers, 812 were paupers, 8 idiots, 5 ex-convicts and 496 as having loathsome and contagious diseases. These were all dumped on Canadian soil, and none of them had been deported by the Canadian government. The statement has appeared in an editorial in a leading daily that many of our foreign-born patients in our insane asylums have been in similar institutions before coming into Canada. A comparison of Canadian and American inspection goes to show that the quality of Canadian immigration should in future be more carefully maintained.

FOREIGN.

Sir Frederick Treves will retire from active practice, it is announced in the English newspapers.

Cuba Has Little Yellow Fever.—Only three cases of yellow fever have come into Havana this year, all from Mexican ports.

The plague in Chili is spreading, having occurred in several cities, including Valparaiso. Smallpox is also spreading and occasioning much alarm.

Kraepelin Goes to Munich.—Professor Kraepelin of Heidelberg has accepted a call to Munich to the chair of psychiatry left vacant by the death of Anton Bumm in April.

Physicians in the German Reichstag.—The new Reichstag will contain seven medical members, including Drs. Mugdan of Berlin, Leonhart of Kiel and Ruegenburg of Bonn. All but two were elected by different political parties.

London Burdened with Mosquitoes.—The suburbs of London along the Thames, below the city, are said to be scourged with mosquitoes, so that outdoor life in the evening is a burden. The cause is not mentioned in the press despatches.

How Many Miles Does the Blood Travel?—The *Riforma Medica* states that with about sixty-nine pulse beats to the minute the blood flows a distance of seven miles an hour. This is equivalent to 61,329 miles a year, and in a man 84 years of age to 5,151,636 miles during the course of his lifetime.

Prize for Joannovics of Vienna.—The Brussels Académie de Médecine has awarded to Dr. G. Joannovics, assistant at the Vienna Institute for General and Experimental Pathology, the prize of $200 offered for the best work based on new experimental researches. His subject was "The Pathogenesis of Icterus."

Panhellenic Congress.—The second annual congress of Greek-speaking members of the profession was held at Athens, May 17 to 23. About 95 of the 350 members in attendance were from the countries farther east. The communications were so numerous that they required ten sessions to complete the program.

Paris Zambaco Prize.—This prize, offered by the French Society of Dermatology, was not awarded this year but an "encouragement" of $70 was given to Messrs. Bezançon, Griffon and Le Sourd for their monograph on "Bacteriology of Simple Chancre," and to Messrs. Carle and Meynet for one on "Digestive Disturbances in Eczema."

An Anti-Mosquito Plant.—Captain H. D. Larymore describes in the London *Times* a plant found in the Niger district which attracts and stupefies mosquitoes. One of these plants growing in a room frees it of mosquitoes and protects against malaria. He has officially reported the existence of the plant to the authorities at Kevy, the capital of the district.

Medical Sea Voyage.—Dr. G. Hirte of the Rheineck sanatorium at Nieder-Walluf a. Rh., Germany, will repeat this year the medical sea voyages with patients which proved so successful last spring. The first voyage will be to Buenos Ayres or Brazil and is expected to last two months or two months and a half. On his return he will start for Japan with another party for a three to four months' trip.

Proceedings of the Prussian Medical Court of Honor.—This peculiar German official institution described in THE JOURNAL, has had 211 cases before it during the last fiscal year. Of this number the complaints came from government officials in 25 instances, from physicians in 110, from the lay public in 25, and 4 were anonymous. About 80 of the suits were dismissed, 26 were compromised, in 14 a penalty or reprimand was imposed and 81 suits are still pending.

Post-Graduate Headquarters at Berlin.—Nearly $315,000 has been collected for the proposed headquarters for post-graduate medical instruction to be established in Berlin. It is to be known as "the Empress Frederick House," and from this center all the paraphernalia necessary is to be despatched to various small towns or villages as needed. These free traveling post-graduate courses which have been established in the last year or two in Germany, have already become a prized feature of German medical life.

The Radium Cancer Cure.—Considerable interest is reported to have been excited in Vienna medical circles by reports of cancer cured by exposure to the rays emanating from the remarkable substance, radium. This was mentioned editorially July 11. Now Dr. Mackenzie Davidson of Charing Cross Hospital, London, reports a case of cancer of the nose cured by the same means. Four exposures, aggregating an hour altogether, were given at intervals of a few days. In three weeks healing was progressing satisfactorily, and in six weeks the growth was all gone.

Suspension of "Memorabilien."—For forty-four years this medical journal has been published at irregular intervals of from one to several months. Dr. F. Betz of Heilbronn has been the publisher and editor and Dr. Guido Bell of Indianapolis the American collaborator. It has been principally devoted to abstracts and has borne as its motto: "Sometimes the smallest ache is the index to diagnosis and therapeutics." Dr. Betz does not care to continue the journal further, and announces its suspension with the close of 1902.,

Contract Practice at Bourg, France.—The physicians of this town of 18,000 inhabitants—14 in all—found that the sickness benefit societies were materially decreasing their income while the rates paid—20c. a visit, day or night—were too low. When they asked for 40c. for an office consultation and 60c. for a call at the residence, with a reduction of 20 per cent. on the total when the bill was paid before a certain date, the societies were incensed and denounced them, and are doing their utmost to induce other physicians to move to the town and accept their rates, ignoring the physicians already settled there. To date they have been unable to do this, and our French exchanges are warning the profession at large not to "pick up the bone which the local physicians have found too bare."

Correspondence.

Regarding "The Boy's Venereal Peril."

NEW YORK, July 16, 1903.

To the Editor:—Since publication of the above-mentioned article, I have received requests for 2,090 reprints thereof. Pressure of practice renders me unable to reply individually to each one of the gentlemen who wrote me on the subject. I therefore ask the privilege of using your columns to answer all.

1. The kind sentiments which my correspondents convey stimulate me to greater efforts than ever before, so to revise the article that it may represent the best work of which I am capable. I need not tell other busy practitioners that I can not do this within the next few days. I expect, however, to have the reprints ready in about three weeks.

2. A number of those who have favored me, ask for "some" or "several" copies. If they will kindly specify how many they desire I will know how large an order for reprints I must give.

3. Many of my correspondents ask me the price of the reprints. Having written the paper to benefit humanity as much as is in my power, I do not desire to profit thereby. Moreover, being engaged exclusively in genito-urinary work, I have no inclination to earn money otherwise.

4. It is beyond my power to grant licenses to reprint "The Boy's Venereal Peril." The copyright rests with the American Medical Association, which owns all papers presented before it.

5. The paper as published in THE JOURNAL of the American Medical Association is incomplete; one reason therefor is in the fact that the remainder, being addressed to boys, is too elementary for appearance in a scientific publication. I therefore requested its omission.

6. The reprints will not contain my name or address or anything else to reveal my authorship. This will prevent such laymen as may be advised to read the paper from confounding it with the advertisements of quacks.

7. Lack of time prevents my undertaking to deliver messages, to ascertain the prices of books and other articles, or to make purchases for some of those who wrote me regarding "The Boy's Venereal Peril."

I repeat my sincere thanks to all those who gave such kind encouragement to this one of my efforts.

FERD. C. VALENTINE.

Historical Errors.

CHICAGO, July 20, 1903.

To the Editor:—In THE JOURNAL of the American Medical Association, July 18, 1903, p. 195, it is stated, under the head of deaths, that the late Dr. DeLaskie Miller of Chicago was "born in New York City," graduated from "Syracuse Medical College in 1842," which is evidently erroneous. According to reliable authority Dr. Miller was born in Niagara County, New York, May 29, 1818, and graduated from Geneva Medical College, New York, in 1842, there being at that date no medical college in Syracuse.

On page 196 of THE JOURNAL it is stated that the New Jersey State Medical Society was organized in 1776, which is evidently erroneous. According to reliable authorities that state society, the oldest in the country, was organized in 1766, and held its meetings annually until they were interrupted by the Revolutionary War in 1776; but they were resumed as early as the exigencies of the war would permit. N. S. DAVIS.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address; but the request of the writer not to publish his name will be faithfully observed.

WHAT IS IT?

CASTROVILLE, TEXAS, July 11, 1903.

To the Editor:—I wish information about a peculiar epidemic we have had here for several months. Nothing in the literature at my command helps me. We have had malaria here for three years, known to me by examination of the blood, generally examined while fresh, and showing the plasmodium and spores, and in each case the margin of the tongue shows some minute red spots, very noticeable, being of different color from the surrounding membrane and varying from a half dozen to several dozen. The other symptoms are very variable, from high fever (103 F. to 99 F.) every other day, headache, sometimes a distinct chill and sometimes not, neuralgias or abdominal pains, in fact all somewhat differently effected, but whenever the tongue showed these spots the blood showed plasmodium and spores. Quinin or methylene blue gave relief and in several instances cured the symptoms, but also in several instances the plasmodium and spores continue in the blood in spite of the continued use of quinin mixed with either arsenic or iron or both, etc. Now things have changed in respect to symptoms, although I have still, among adults, occasional cases with the above symptoms, but children here have developed a cough due to a pharyngitis with relaxed uvula that very closely simulated whooping cough; some last about a week and some are still coughing after six weeks; and now, to confuse the thing more, an erythema has developed, accompanied by fever, 102 F. or so. It is scarlatiniform in appearance, yet there is an accompanying cough and conjunctivitis and very mild coryza. The rash lasts from two to three days, and fades when fever is low, with no desquamation, no enlarged glands and no albumin in the urine, but spores and plasmodium in the blood and the spots before mentioned on the outer margin of the tongue, which, at the same time, shows in some cases enlarged papilla We have had scarlet fever, measles German measles and whooping cough here, but this does not fully represent any one of them, yet resembles them all in some cases or rather, some one of them more particularly I am forced to believe it is malarial Very fortunately so far there have not been any deaths and the bronchitis very mild that accompanies or, rather, follows the rash I have tried to describe the condition, but it is hard: some have the cough and no rash, some rash and little cough, some itch and some do not, and the more I consult the record I have been keeping, the more confused I get when I try to compare the symptoms with any of the (to me) known diseases JOHN T FITZSIMON, M D

State Boards of Registration.

New Medical Provisions in the Virginia Law.

The legislature of Virginia has passed the following amendments to the medical practice act:

1 Be it enacted by the general assembly of Virginia that section seventeen hundred and forty-seven of the Code of Virginia, as amended and re-enacted by an act approved March 7, 1900, be amended and re-enacted so as to read as follows

1747 *Examination of Applicants for the Practice of Medicine and Surgery; Re-examination; Fees of Board*—It shall be the duty of the said board at any of its said meetings to examine all persons making application to them who shall desire to commence the practice of medicine or surgery in this state, *provided* said applicant shall produce before said board a diploma or other satisfactory evidence of his graduation in some medical college or institution teaching the art of healing human diseases chartered by the state or territory in which the same is situated, provided that any undergraduates taking a graded course in any regularly chartered medical school shall be entitled to examination on such branch or branches as he or she may present a certificate from the said college of having passed a satisfactory examination, and having once passed a satisfactory examination on each of such branches before the State Board of Medical Examiners no further examination shall be required on such branch or branches but an applicant failing to pass a satisfactory examination on any of such branches shall not be permitted to be examined on such branch or branches until he or she presents a diploma of graduation as doctor of medicine from some regularly chartered college of medicine And when an applicant shall have passed an examination satisfactory as to proficiency before the board in session, the president thereof shall grant to such applicant a certificate to that effect; provided however, that any applicant professing a system of medicine which does not require the use of drugs in the treatment of disease shall be exempt from standing an examination of materia medica

A fee of ten dollars shall be paid to said board through such officers or members as it may be designated by each applicant before [illegible] And in case any applicant shall fail to [illegible] mination he shall not be permitted to stand [illegible] within the next six months thereafter [illegible] to pay the fee prescribed as aforesaid [illegible] no applicant shall be rejected on his examination on the account of his adherence to any particular school of medicine or system of practice nor on account of his views as to the method of treatment and care of diseases, and provided further, that when, in the opinion of the president of the board any applicant has been prevented by good cause from appearing before the board, he shall have authority in his discretion to grant a special permit to such applicant to practice medicine or surgery until he shall have an opportunity to appear before the board in session for examination which said special permit shall be revocable at the discretion of the president, and in no case shall it entitle the holder thereof to practice after the next regular meeting of said board

The said board shall have, in their discretion authority to accept in lieu of examination of an applicant a diploma or other satisfactory evidence of the graduation of the applicant in some medical college chartered by the state or territory in which the same is situated, and a certificate from the examining board of any state or territory of the United States or the District of Columbia showing that said applicant has passed a satisfactory examination as to his proficiency, and obtained license from said board to practice medicine and surgery in said state, territory or district provided that any person who was examined by the state examining board prior to Jan 1, 1900, and whose fee for such examination was duly paid but who failed to pass said examination shall have the right and privilege of taking the examination before the state board, notwithstanding the provisions of this act

2 This act shall take effect from its passage

Approved April 23, 1903

Be it enacted by the general assembly of Virginia that section seventeen hundred and fifty of the Code of Virginia as amended and re-enacted by an act approved March 7 1900, be amended and re-enacted so as to read as follows

1750 *Who Prohibited from Practicing Medicine or Surgery without Certificate; Penalty for Practicing Illegally, What Courts Have Jurisdiction to Inflict*—No person who shall have commenced the practice of medicine or surgery in this state since Jan 1, 1885, or who shall hereafter commence the practice of the same shall practice as a physician or surgeon for compensation without having first obtained a certificate from the State Board of Medical Examiners and cause the same to be recorded as aforesaid or a special permit from the president of the said board To open an office for such purpose or to announce to the public in any way a readiness to practice medicine in any county or city of the state, or prescribe for, or to give surgical assistance to, or to heal, cure or relieve, to attempt to heal, cure or relieve those suffering from injury or deformity, or disease of the mind or body, or to advertise, or to announce to the public in any manner a readiness or ability to heal, cure or relieve those who may be suffering from injury or deformity, or disease of the mind or body, shall be to engage in the practice of medicine within the meaning of this section; provided, that nothing in this section shall be construed to apply to or to limit in any manner the manufacture or sale of proprietary medicines, or apply to, affect or interfere in any way with the operation of any hospital now established in this state, or any person while engaged in conducting such hospital now established, if there be a licensed physician resident and practicing therein, or to any person who commenced the practice of osteopathy in this state prior to Jan 1, 1903

It shall also be regarded as practicing medicine within the meaning of this section if any one shall use in connection with his or her name, the words or letters "Dr.," "Doctor," "Professor," "M D" or "Healer" or any other title, word, letter or designation intending to imply or designate him or her as a practitioner of medicine or surgery in any of its branches; but this section shall not be construed to apply to non itinerant opticians who are at this time engaged in the practice of optometry in this state nor to professional or other nurses Any person who shall practice medicine or surgery in this state in violation of the provisions of this section shall be fined not less than $50 nor more than $500 for each offense; and it shall not be lawful for him to recover by action, suit, motion or warrant in any of the courts of the state any compensation for services which may be claimed to have been rendered by him as such physician or surgeon The county and corporation courts shall have exclusive original jurisdiction to try offenses for violations of the provisions of this section committed within their respective counties and corporations

2. This act shall take effect from its passage

Approved April 24, 1903.

This, as the *Old Dominion Journal* remarks, applies to faith healers, Eddyites, osteopaths, etc., all of whom must pass the examination if they pose as healers.

Deaths.

Herman Nauman, M.D. University of Jena, Austria, 1851, a pioneer physician of Milwaukee, surgeon of the Ninth Wisconsin Volunteer Infantry in the Civil War, formerly county physician of Milwaukee County, and in charge of the Marine Hospital, died at his home in Milwaukee, July 4, aged 79.

Samuel J. Radcliffe, M.D. University of Georgetown, D. C., 1852, a veteran of the Civil War, in which he served as medical director, a member of the Medical Society and Medical Association of the District of Columbia, died at his home in Washington, July 9, after an illness of seven months, aged 75.

George R. Wells, M.D. Rush Medical College, Chicago, 1886, of Livingston, Mont., died at Bethany, N. Y., July 10, from the effects of chloroform, self-administered, presumably for the relief of spinal pain, aged 41. He was a member of the American Medical Association.

William C. Bailey, M.D. Berkshire Medical College, Pittsfield, Mass., 1844, assistant surgeon of the 179th N. Y. Volunteer Infantry in the Civil War, and a resident of Adams Center, N. Y., for half a century, died at his home in that place, July 6, aged 77.

Joseph S. Cook, M.D. University of Pennsylvania, Philadelphia, 1856, surgeon of the 31st N. J. Volunteer Infantry in the Civil War, died at his home in Washington, N. J., July 4, from hypostatic pneumonia, after an invalidism of thirteen years, aged 73.

Nathan F. Brown, M.D. Detroit Medical College, 1870, a veteran of the Civil War, and a member of the Michigan State Medical Society and the American Medical Association, died at his home in Detroit, July 6, after years of ill health, aged 66.

Robert Black Ewing, M.D. University of Pennsylvania, Philadelphia, 1865, a member of the American Medical Association, and for nearly forty years in practice at West Grove, Pa., died at his home in that place, July 3, from heart disease, aged 62.

R. B. Parker, M.D., inspector on the steamer *Mount Vernon*, died from yellow fever at the government quarantine station, Ship Island, Miss., July 6, from yellow fever, with which he was stricken on his first trip to Costa Rica.

Richard W. S. Martin, M.D. Medical College of Virginia, Richmond, 1861, a member of the Lauderdale County Medical Society, died at his home in Henning, Tenn., after an illness of three years, from dropsy, July 16, aged 63.

Alonzo Garwood, M.D. Starling Medical College, Columbus, Ohio, 1850, the oldest practitioner in Cass County, Mich., died July 1, from heart disease at his home in Cassopolis, aged 78. He retired from active practice in 1901.

less and the blood pours freely in this direction. The ovum is detached as a result of the stagnation of the blood current, and blood also escapes from the points where it has been attached. In abortion in the uterus the contraction of the walls tends to arrest the bleeding, but there is no contraction in tubal abortion, and the hemorrhage continues unchecked. He maintains the possibility of tubal abortion, that is, violent hemorrhage into the abdominal cavity without rupture. He prefers incision to exploratory puncture, and operates when the fetus is still in the tube, but if it has escaped from the tube he waits as long as possible. If impossible to distinguish he is guided by the severity of the symptoms. The ideal is the complete extirpation of the fetal sac. In case of suppuration, however, it is certainly better to suture it in. He chooses the vaginal route only in case of fever, and then only incises the sac. Werth thinks that the results of active and conservative treatment about balance.

In conclusion, he made an earnest plea for stricter concentration of research in the domain of ectopic pregnancy, and the restriction of the literary over-production which is spreading over wide surfaces without going deep. This over-production renders it more and more difficult for one to keep posted on the subject, and is a direct hindrance to scientific progress, for in the overwhelming mass of long-established facts which are simply brought forward and published over and over again, the really new and important results of original research are easily overlooked by those especially interested in the subject.

Sarwey, Tübingen, from an experience of 71 cases of extrauterine pregnancy believes that colpotomy should be restricted to cases of uncomplicated tubal moles without hematocele, or suppurating and purulent hematoceles.

Strassmann, Berlin, with an experience of 20 cases, urges laparotomy for every case of severe hemorrhage, or of dubious diagnosis or lack of after-care in a clinic. He warns that the uterus must never be drawn forward; it must always be able to be pushed upward. This warning was endorsed by others.

Jung, Greifswald, does not agree with Veit that it is best to wait if the fetus is dead, and operate only on renewal of symptoms. The conditions in the latter case are much less favorable for an operation. Long-continued absorption impairs the working capacity and the case frequently terminates in perimetritis. In his 86 cases he operated through the abdomen in 43, and through the vagina in the same number, with 2 deaths in each category. He always operates unless particularly favorable external conditions exist or there is reason to expect rapid absorption. He always strives to leave as much as possible of the tube or ensure the permeability of the other.

Küstner, Breslau, has operated on 154 cases of extrauterine pregnancy with a mortality of 5. He advocates exploratory puncture and reiterates that a small amount of old blood in the canula is evidence of an old extrauterine pregnancy. Wealthy women may be treated expectantly, but women of the working classes should be operated on and by the abdomen, as the formation of adhesions can thus be better guarded against.

Prolapse Operations.

The addresses on this subject were by Martin, Greifswald and Küstner, Breslau. The former ascribes the etiology of prolapse to impaired resisting power on the part of the connective tissue after pregnancy or infectious diseases or in the menopause, etc. Obstetric trauma, inflammations, tumors, are merely the incidental factor on this foundation. He does not regard pessaries as of much value for prophylaxis; the prolapse benefits as the general health improves. He advocates early operation, early reduction of the size of the vaginal protrusion and restoration of the bladder to its place. Extirpation of uterus and vagina is only exceptionally indicated, 19 times in his experience in 2,000 operations for prolapse. Küstner, on the other hand, is a partisan of pessary treatment, except for working women, for whom the ring pessary has its inconveniences. He thinks that the pessary ensures a better position than any operation. It must be worn with the uterus in a good position or a year at least, after which recurrence is rare. Treatment should be addressed principally to the retroversion; the vaginal prolapse is a secondary matter.

Ziegenspeck, Munich, has been experimenting on cadavers, trying to induce prolapse, and found it practically impossible. For this and other reasons which he enumerated, he believes that the cause of prolapse lies in the difference between the abdominal and the atmospheric pressure. When the portio vaginalis happens to lie over the opening in the floor of the pelvis, the conditions are ripe for prolapse, as it then experiences the stress of the difference in pressure and is sucked outward by the lesser atmospheric pressure.

Schauta, Vienna, described his method of treating severe cases by drawing down the uterus to the vesico-vaginal septum with extensive colpoperineorrhaphy, closing the vagina behind completely over the uterus. The important point is the strengthening of the recto-vaginal septum. Conception must naturally be prevented after this operation, and he asserts that all methods which retain the sexual function are liable to recurrence. Bumm, Halle, believes in total extirpation for women near the menopause in cases of unusually large prolapse with enterocele, of chronic metritis, erosions or ulcerations, affections of the adnexa or tumors and rebellious cystitis with cystocele. In 105 patients treated by total extirpation, 93 per cent. have regained their complete working capacity and 75 per cent. are objectively cured. His mortality has been 2 in 105, and in 176 cases reported in the literature the mortality was 6.9 per cent.

Plans for the Next Congress.

The eleventh congress will convene in 1905 at Kiel, under the presidency of Professor Werth. The special subjects appointed are: "Methods of Artificial Dilation of the Pregnant and Parturient Uterus," and "Permanent Results of Ovariotomies, with Special Reference to Tumors of Dubious Anatomy."

The association also voted by request on two subjects as suggestions for the international congress of gynecology to convene at St. Petersburg in 1905, adopting for the first, "Suture of the Abdominal walls," and for the second, "Operative Treatment of Uterine Myomata."

A detailed report of the congress appears in the *Muenchener Med. Wochft.*, June 23 and 30.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Minutes of the Thirteenth Annual Meeting, held at New Orleans, May 4, 1903.

(Continued from page 201)

Report of Committee on Revision of Constitution as to the Standard of Admission.

The motion of Dr. Geo. M. Kober, that the order of program be changed so that the symposium take precedence of the report of the special committee on revision of the constitution, was lost. (Nays, 23; yeas, 21.)

The report of this committee being called for, Dr. J. M. Dodson, in the absence of the chairman, Dr. Ritchie, offered the following majority report:

MAJORITY REPORT.

REQUIREMENTS FOR ADMISSION TO MEDICAL COLLEGES.

In presenting their report on the Revision of Article III of the Constitution, the committee deems it unnecessary to enter into a very extended argument, but it may be of advantage to call attention to a few facts in connection with the matter and to set forth their reasons for framing certain portions of the amendment as they appear.

Attention is first called to the action of the Association at Saratoga, which led to the appointment of this committee. It will be remembered that the address of President Vaughan, which, among other things, recommended an increase in the admission requirements prescribed by the Association, was referred to a committee; the following action was taken in the matter of the report of that committee. I quote from the minutes: "On motion the recommendation of the committee with reference to making the standard of admission the full equivalent of a four years' high school course and the appointment of a committee to consider this matter and to prescribe the branches to be included in this course and time to be devoted to each, was adopted. It was moved to accept the recommendation that the examination of the student (for admission) be taken entirely out of the hands of the medical school. Motion amended to lay on the table. Amendment lost by a vote of 21 against and 13 for. The original motion to accept was then put and carried. The committee recommended that Article III, Section 3, should be amended to read 'two conditions' instead of 'two or more' conditions. This recommendation was accepted on motion. The committee further reported as follows: "The committee would recommend that a special committee of three be appointed to consider the question whether the standard of admission should not be made the full equivalent of a four years' high school course, such committee to report at the meeting of the Association next year."

"On motion of Dr. Long the report was adopted as a whole, and the committee, Drs. Ritchie, Dodson and Wathen, continued, as the special committee recommended in the report, this special committee to report at the New Orleans meeting, May, 1903."

It will be observed that the instructions to this committee by the Association at Saratoga were very explicit with regard to certain things. While the minor details of the report may, therefore, be criticised, the recommendation that the requirements for admission as laid down in Article III be made a four years' high-school diploma, or a full equivalent therefor, has already been passed on by this Association.

Previous to the organization of the Association of American Medical Colleges there was a standing committee on medical education of the American Medical Association; this committee was abolished when this Association was formed, it being understood and agreed at the time that the chief object of this Association was to elevate the standards of medical education in the United States. It is believed that this organization was a factor in elevating the standards in the early period of its existence and that, at least indirectly, it assisted in securing the statutory enactments in the several states establishing the standard of attainment for medical practice. If this be true, however, the impulse given to the several state boards of health and examining boards has carried them considerably beyond the point reached by the Association, for, at the present time at least, eight states, namely, New Hampshire, New York, Pennsylvania, Ohio, Indiana, Illinois, New Mexico and Colorado refuse to recognize colleges which do not demand a four years' high school diploma or its equivalent as a prerequisite for admission. The advance made by the state boards in this direction has been very rapid and satisfactory, and the example set in the states mentioned is very certain to be followed by others in the near future. Meanwhile, this Association has remained at a standstill for more than five years, in spite of the earnest effort to secure some action which has been made at the last four meetings.

For some reason, too, the American Medical Association seems to have concluded that it ought again to take an active part in the matter of medical education, the inference being that the status of this Association, to which were relegated all matters of medical education at the time of its organization, is not satisfactory. At the meeting in Saratoga last year a standing committee on medical education was appointed which will make a report at the session about to be held. It is not known, of course, what this report will be, but that action of some sort will be taken seems very probable. It has been intimated that membership in the Association and its constituent state and county societies should be denied to those who are connected with medical schools not up to a given standard. It would be humiliating, indeed, for this Association, if standards should be established by the American Medical Association considerably in advance of the standards of this body, which has posed as the particular sponsor for higher medical education in this country.

So far from representing the relatively high standards for which it stood at the time of its organization, its requirements are utterly inadequate to meet the demands of the profession at the present time. The Association has lost the respect of the profession, its standards are entirely discredited by the better examining boards, and it may fairly be said that it is a questionable honor for any institution to be a member of it. A position in the faculty of some of the institutions here represented is a dubious distinction.

It will, perhaps, be urged against increasing the existing requirements to the standards proposed, that it is a hardship to the poor and self-supporting students who may not have had an opportunity to secure a high school education. The reply to this criticism is obvious; in the first place, the medical college is not an eleemosynary institution designed to induce poorly-prepared young men to enter the ranks of a profession for which they are not qualified. In the second place, it is a serious injustice to such a student to allow him to take up the study of medicine. With over five thousand graduates emerging from our medical colleges annually, which is at least two thousand in excess of the demand, the competition among practitioners is keen and growing ever keener; it is not difficult to foretell that the successful men in this competition will be, with rare exceptions, those who are well equipped, and especially those whose fundamental education is the most thorough. Reasonably high requirements, therefore, are primarily in the interest of the students themselves. And, thirdly, it should be said, that the self-supporting students are the ones of all others, who can afford to spend the extra time necessary to properly prepare themselves for medical study. The student who is dependent on his parents, or some one else, for his support may well be anxious to complete his course as soon as possible that he may cease to be a burden on others and become self-supporting; to the student, on the other hand, who is paying his way as he goes, the addition of one, two, or three extra years is a matter of minor importance.

That the adoption of such standards as are proposed here would be disastrous to unendowed medical colleges, seems to your committee a most surprising argument to bring forth. For what are medical colleges established? For the benefit of the members of the faculty, or of the board of trustees who may reap some financial profit from them? Surely this is not the case. No medical school can justify its existence except on the ground that it is engaged in a work that is necessary to the community and that it is being conducted in a proper and legitimate way along lines and in accordance with the standards that are demanded by the times. If the statutes and rules of the examining boards of eight of the leading states have already established higher standards, it seems to your committee that it must be a difficult task for any faculty to maintain its right to turn out students on requirements far below these demands which are pretty uniformly the very minimum that the conditions warrant.

The report of the committee scarcely needs any elaborate explanation, but it may be well to point to some things in connection with the several sections.

First, it will be noted that in Section 1 very liberal allowance is made as to what sort of credentials a student may present; they may be from a four years' high school, from a normal school, a certificate of admission to a university or college, or by examination. It is true that the institutions from which credits may be accepted are confined to those recognized by a state university. Surely one could hardly ask a more liberal proposition than this, however; some restriction must be imposed, as it is well known that the term "high school" may mean anything from less than a good grammar school to the high grade institutions of our larger cities, and similarly the term college must be defined, for as indiscriminately used in this country it may mean anything from a cheap grade business college to an institution of real university rank.

It has been suggested, however, that in some states there is no state university and in some others the state institution does not represent the highest standards. This objection seems to your committee a valid one, and we desire to propose an amendment to the article as printed. May I say, at this point, that the committee is not at all insistent in reference to the minor details of this report; indeed, we believe that certain other changes will meet objections which have been raised by members of the Association with whom the committee have conferred, and we propose, therefore, some other amendments, presently to be mentioned. The committee is strenuous only in its insistence on the fundamental requirement of a four-year high-school diploma or its equivalent. In reference to this clause, your committee propose the following amendment: "It is moved to amend Section 1 by striking out subsections A and B, as they appear in the printed report, and substituting therefor the following: '(A) A diploma from a four-year high school, or academy, or normal school, which requires for admission evidence of the completion of an eight-year course in the primary or intermediate schools.'"

It has been objected further to Section 1, (C) that because of the great lack of uniformity among colleges, it would be difficult, if not impossible, to make sure that the certificate of admission to the freshman class of a college or university is the full equivalent of a four-year high school education. It is proposed to amend this section by substituting the following: "(C) a bachelor's degree from an approved college or university."

In specifying the subjects which may be presented on examination, it has been the aim of your committee to make the terms very liberal; no branches are made compulsory which are not already included in the demands of this Association and the additional credits which may be presented to make up the equivalent of a four years' high school course cover every branch which is at all likely to be included in the high school curriculum. It is thought by some that a larger list than this and greater liberality should be provided for in these branches of choice, and, therefore, the following amendment is proposed: Moved to amend Section 1 (D) of Article III, by adding to the branches of choice, "general history, one or more years; Greek, one or more years; logic, one or more years; psychology, one or more years; Greek and Roman history, one or more years.

Section 2 is simply an explanation of the actions of this Association taken at Saratoga last year. Some objection has been made to allowing the faculty of a literary or scientific institution to conduct this examination, while the members of the medical faculty are prohibited from so doing. Your committee propose, therefore, the amendment of Section II so that it shall read as follows: "This examination must be conducted by or under the authority of the superintendent of public instruction of the city or state in which the college is located. In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission."

Section 3 is also a simple statement of the conditions to which the Association is already committed by its action at Saratoga; the existing custom of allowing a student to enter a medical school with unlimited conditions is so illogical and indefensible that comment on Section 3 seems superfluous.

Section 5 prescribes the minimum of time attendance which is possible under existing statutes; the length of session which is laid down by our present constitution, namely, six months, is one month short of that demanded by several state examining boards at the present time.

Section 6 is modified from the existing regulations only in omitting the allowance of credit to graduates in pharmacy, dentistry, and veterinary medicine. At least four boards of health, namely, New York, Pennsylvania, Illinois and Minnesota, have already ruled in accordance with the proposed amendment. We believe that the time has come when no allowance should be given for work which corresponds so imperfectly to that of the medical schools proper. The allowance of credit for work actually accomplished in a standard university or college in the course for the bachelor's degree is retained, for it is believed by a majority of your committee that this plan has been of immense service in encouraging young men intending to study medicine to take a college course as a precedent thereto. To the argument that there are many colleges and universities whose work is unworthy of credit, the reply is obvious that discrimination must be exercised by the medical schools in this regard just as in accepting credit from other medical schools, and it is believed that there is no larger proportion of unworthy institutions of general learning than there is of unworthy medical schools in this country. Many of our better colleges now offer to students courses in chemistry, physics, anatomy (even including human dissection), histology, embryology, physiology, and bacteriology which are uniformly of higher character and will average to be much more thorough than the corresponding courses offered in the medical schools. The plan of giving a flat year's credit for a degree irrespective of work done is not satisfactory and your committee would propose that another year the amendment be modified so as to give credit only on the basis of work actually accomplished which corresponds to the work of the medical curriculum; such credit should carry with it, however, a corresponding time credit. It was thought that it would be best, however, to leave the ruling in regard to college graduates as it stands for another year.

In conclusion, we beg to express the opinion that if this report errs it is on the side of leniency because the proposed amendments will not place this Association on any higher plane, so far as requirements for admission are concerned, than has already been established by statutory enactment or the rulings of medical examining boards in several states, but the effort to make any increase in requirements has been so barren of results up to date that it was thought best not to ask more than is prescribed. We beg to express the hope that the Association will place itself again in a position which will command the respect of all those who are interested in higher medical education by the passage of the proposed amendment. By nothing less than this can the Association justify its continued existence as an organization which was established and presumptively continues to exist to elevate the standards of medical education in America.

[Signed.] Parks Ritchie.
John M. Dodson.

The following amendment was introduced by a majority of the special committee appointed for the purpose of revising Article III of the Constitution:

It is moved to amend Article III by striking out all of it and inserting in lieu thereof the following:

ARTICLE III.

SECTION 1. Every college holding membership in this Association shall demand of each student, as a minimum requirement for admission to the medical course, either (*a*) a diploma from a four-year high school or academy whose credits are accepted by a state university, or (*b*) the diploma of a state normal school having a course of instruction equivalent to a four-year high school course whose credits are accepted by a state university, or (*c*) a certificate of admission to the freshmen class of a state university or of a college whose credits are fully recognized by a state university, or (*d*) an examination in the following branches:

(*A*). English—grammar, rhetoric and composition, the equivalent of two years' high school work in this branch.

(*B*). Algebra—to quadratics.

(*C*). Latin—one year high school work, including grammar and four books of Cæsar, or a full equivalent therefor.

(*D*). Physics—one year of high school work, including some laboratory work.

(*E*). U. S. History—one year of high school work.

Besides the above, seven additional branches of the student's choice selected from the following:

1. Latin—one year; Cæsar, Cicero or Virgil.
2. German—one year; grammar and literature.
3. French—one year; grammar and literature.
4. Chemistry—one year; with laboratory work.
5. Botany—one year.
6. Zoology—one year.
7. Geometry—one year; plane.
8. Geometry—one year; solid.
9. Trigonometry—one year.
10. Astronomy—one year.
11. Physiology—one year.
12. Physical geography—one year.
13. English literature—one year.
14. Advanced algebra—one year.
15. Civics—one year.
16. General history—one year.

SEC. 2. This examination must be conducted by members of the faculty of a literary or scientific college, or by a superintendent of public instruction; in no case shall it be conducted by any person connected with the faculty of a medical school to which the student is seeking admission.

SEC. 3. A student may be allowed to enter on his medical work conditioned in not more than two branches (one year's work in each), but these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

SEC. 4. Colleges members of this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course.

SEC. 5. Candidates for the degree of doctor of medicine shall have attended four years' courses of study, each annual course to have been of not less than seven months' duration and at least twelve months shall intervene between the beginning of any course and the beginning of the preceding course.

SEC. 6. Time credits may be given to students who have the necessary entrance requirements and who are graduates or students of colleges of homeopathic or eclectic medicine for such courses of instruction of the required duration as they have successfully fulfilled, excepting in the course of the fourth year, provided they pass satisfactory examinations in materia medica and therapeutics. Credit for one year of time may be given to students holding the degree of A.B., B.S., or other equivalent, from a reputable university or literary college.

SEC. 7. A college which gives less than a four years' course of study, but does not graduate students and is possessed of other required qualifications, may be admitted to membership.

NOTE.—One year's work in any subject of a high school or academic course is defined to mean a series of daily recitations, of forty-five minutes or more in time, for each week of a school year of not less than thirty-six weeks.

This amendment is seconded by the following colleges: medical department of the University of Buffalo, Johns Hopkins University Medical School, medical department of Western Reserve University, medical department of the University of Michigan, Rush Medical College, in affiliation with the University of Chicago, Northwestern University Medical School, medical department of the University of Minnesota, medical department of the University of Iowa, medical department of the University of Kansas, medical department of the University of California.

In the form finally adopted the amendment read as follows, and it was provided that it take effect July 1, 1905:

ARTICLE III.

SECTION 1. Every college holding membership in this Association shall demand of each student, as a minimum requirement for admission to the medical course, either (*a*) a diploma from a four-year high school or academy or normal school requiring for admission evidence of the completion of an eight-year course in primary and intermediate schools, or (*b*) a bachelor's degree from an approved college or university, or (*c*) an examination in the following branches:

(*A*). English—grammar, rhetoric and composition, the equivalent of two years' high school work in this branch.

(*B*). Algebra—to quadratics.

(*C*). Latin—one year high school work, including grammar and four books of Cæsar, or a full equivalent therefor.

(*D*). Physics—one year of high school work, including some laboratory work.

(*E*). U. S. History—one year of high school work.

Besides the above seven additional branches of the student's choice selected from the following, each to have been pursued one or more years:

1. Latin—Cæsar, Cicero or Virgil.
2. German — grammar and literature.
3. French — grammar and literature.
4. Chemistry—with laboratory work.
5. Botany.
6. Zoology.
7. Geometry—plane.
8. Geometry—solid.
9. Trigonometry.
10. Astronomy.
11. Physiology.
12. Physical geography.
13. English literature.
14. Advanced algebra.
15. Civics.
16. General history.
17. Greek.
18. Logic.
19. Psychology.
20. Ethics.
21. Greek and Roman history.

SEC. 2. This examination must be conducted by or under the authority of the superintendent of public instruction of the city or state in which the college is located; in no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

SEC. 3. A student may be allowed to enter on his medical work conditioned in not more than two branches (one year's work in each), but these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

SEC. 4. Colleges of this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course.

SEC. 5. Candidates for the degree of doctor of medicine shall have attended four years' courses of study each, and at least twelve months shall intervene between the beginning of any course and the beginning of the preceding course.

SEC. 6. Time credits may be given to students who have the necessary entrance requirements and who are graduates or students of colleges of homeopathic or eclectic medicine for such courses of instruction of the required duration as they have successfully fulfilled, excepting in the course of the fourth year, provided they pass satisfactory examinations in materia medica and therapeutics. Credit may be given to the holder of a bachelor's degree from a reputable college or university for any work in the medical branches which he has successfully completed in his college course that is the full equivalent of corresponding work in the medical curriculum. Such a student may be allowed to complete the course for the medical degree in not less than thirty-one months, provided that he completes the remainder of the medical curriculum in that time.

SEC. 7. A college which gives less than a four years' course of study, but does not graduate students and is possessed of other required qualifications, may be admitted to membership.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the disease seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Intolerance of Milk.

Robin, in *Jour. des. Pract.*, states that milk, in order to overcome intolerance, should be given at regular intervals and in definite quantities. It is best administered hot, but not boiled. The patient should be instructed to sip it slowly and should lie quietly for half an hour after taking it, with hot fomentations over the gastric region. Diarrhea, pain, flatulence and constipation may render it difficult to keep the patient on a milk diet.

To relieve the epigastric pain and distress the following is recommended:

℞.	Sodii bicarb.			
	Magnesiæ ustæ, āā	ʒi	4	
	Cretæ preparatæ	ʒiss	6	

M. Ft. chart. No. x. Sig.: One to be given after each feeding of milk; or:

℞.	Pil. pancreatin	gr. i-ii		06-.12

Sig.: One to be taken after food.

To relieve the flatulence which is dependent on fermentation the following solution is recommended:

℞.	Ammon. fluorid.	gr. iii		20
	Aq. destil. q. s. ad	℥x	300	

M. Sig.: One teaspoonful after taking the milk.

If in doubt as to the nature of the fermentation the following should be given:

℞.	Sulphuris	gr. iii		20

M. Ft. cachet No. i. Sig.: One after each feeding.

To correct the constipation the following pill:

℞.	Pulv. aloes	gr. i		06
	Ext. hyoscyami			
	Ext. belladonnæ, āā	gr. 1/12		005
	Ext. glycyrrhizæ	gr. iss		09

M. Sig.: One to three such pills at bedtime.

The diarrhea may be checked by administering an infusion of strawberry root, using about twenty grains of the root at one dose, from which the infusion should be made, or by bismuth in proper doses.

Gastrointestinal Atony.

The following is recommended by *Médecine Orientale* in the treatment of gastrointestinal atony:

℞.	*Magnesiæ ustæ*			
	Cretæ preparatæ, āā	℥i	30	
	Pulv. calumbæ	gr. xxx	2	
	Pulv. vanillæ	gr. xv	1	

M. Sig.: One half teaspoonful before each meal.

Chronic Articular Rheumatism.

E. C. Hill, in *Med. Standard*, recommends the following treatment for chronic articular rheumatism:

As a liniment.

℞.	Linimenti terebinthinæ			
	Tinct. opii, āā	℥i	30	
	Linimenti saponis	℥iii	90	

M. Ft. linimentum. Sig.: To be applied externally to the affected joints.

Internally the following:

℞.	Potassii iodidi	gr. xx	1	30
	Vini colchici rad.	m. v		30
	Syr. sarsap. co. q. s.	ʒi	4	

M. Sig.: At one dose, to be repeated after each meal; or:

℞.	Liq. potassii arsenitis	m. v		30
	Pot. iodidi	gr. v		30
	Syr. simp. q. s. ad	ʒi	4	

M. Sig.: To be taken at one dose and repeated after each meal.

In the aged and debilitated the following:

℞.	Quin. sulph.	gr. iss		09
	Tinct. ferri chloridi	m. xii		75
	Elix. cascaræ sagradæ q. s. ad	ʒi	4	

M. Sig.: One dessertspoonful three or four times a day well diluted in water; or:

℞.	Potassii iodidi	gr. x-xx		65-1.30
	Spts. chloroformi	m. v		30
	Tinct. cinchonæ co. q. s.	ʒi	4	

M. Sig.: At one dose, to be repeated three times a day, well diluted in water; or:

℞.	Acidi salicylici	gr. xv	1	
	Elix. cascaræ sagradæ	ʒiv	15	

M. Sig.: At one dose.

As an ointment the following:

℞.	Acidi salicylici	ʒv	20	
	Alcoholis	℥iii	90	
	Olei ricini	℥vi	180	

M. Ft. unguentum. Sig.: Apply locally.

Enuresis.

The following formulæ by Sheffield are recommended in the treatment of enuresis:

℞.	Ext. ergotæ flu.	ʒiii	12	
	Ext. rhois toxicodendron. flu.	ʒi	4	

M. Sig.: Five to ten drops every four to six hours.

In cases of incontinence due to hyperesthesia of the neck of the bladder, irritating foods should be avoided, sitz baths employed and the following antispasmodic mixture given:

℞.	Ext. hyoscyami	ʒss	2	
	Sodii bromidi	ʒi	4	
	Aq. anise	℥i	30	
	Syr. simp. q. s. ad	℥ii	60	

M. Sig.: One teaspoonful every 4 to 6 hours. Counter-irritation by means of mustard plasters should be employed over the lumbo-sacral region.

Treatment of Scalp Wounds.

Bayard Holmes, in *Denver Med. Times*, gives the following suggestions in the treatment of scalp wounds:

1. Shave three inches about every scalp wound.
2. Make every scalp wound a large incised scalp wound, so that it may be explored with the finger.
3. Use no probe except the index finger.
4. Trim with the scissors the edges of the scalp wound; the razor and the brush are not effective.
5. Scrape out an old wound with a sharp spoon as a part of the mechanical removal of infection.
6. Sew up clean and bloodless scalp wounds without drainage, inserting the stitches half an inch or more from the edges of the wound and tying on one side.
7. Remove the stitches at the end of forty-eight hours, being careful to cut the stitches near the skin so that none of the exposed and infected silk will be drawn through the scalp.

Trachoma.

The following treatment of trachoma is recommended by *Médecine Orientale:* An instillation of iodic acid (1 to 100) and the conjunctiva swabbed with the following solution:

℞.	Potassii iodidi	ʒiss	6
	Acidi iodici	gr. lxxv	5
	Aquæ	℥iii	90

M. Sig.: Apply locally. Any granulations present should be touched with a stick of iodic acid, and the membrane massaged after applying the following powder:

℞.	Acidi iodici	gr. xv	1
	Sodii iodati	gr. lxxv	5
	Acidi borici	℥iii	90

M. Sig.: Apply locally to the affected membrane.

Pertussis.

The following outline of treatment, according to an abstract in *Month. Cyc. of Med.*, is the most satisfactory in the treatment of whooping cough: Antisepsis of the buccal and nasal mucous membrane; painting the pharynx several times a day with validol containing some oil of bitter almonds, and a 5 per cent. solution of cocain; inhalation of oxygen saturated with validol and cherry laurel water, several liters, five or six times a day; a daily change of bedroom and daily fumigation of the vacant room with sulphur; internally euquinin and belladonna:

[Validol contains 30 per cent. menthol, 70 per cent. valerianic acid, and is a nerve sedative, given internally in 10 to 20 drop doses.]

Kilmer, in *N. Y. Med. Jour.*, recommends inhalations of pure steam or creasote vapor to allay the paroxysm. This may be administered by means of the croup kettle and repeated two or three times daily. Where there is marked spasm of the glottis, inhalations of chloroform are of benefit. Antipyrin, sodium bromid and quinin are the drugs preferred by the author. For a child two years of age the following combination:

℞.	Sodii bromidi	gr. iii		20
	Antipyrini	gr. i		06
	Syr. ipecac.	m. iv		25
	Aquæ q. s. ad	ʒi	4	

M. Sig.: One such dose every two hours for three or four days.

The patient is then *given* three grains of quinin sulphate every three or four hours for four days and then put back on the liquid combination.

He advises, as a mechanical measure, the use of a stockinet band similar to that employed by the orthopedic surgeon before applying a plaster-of-paris bandage. This band is made to extend from the axillæ to the pubes and fits the body snugly. This bandage is used to control the vomiting, and thus in nurslings prevents the inanition which would otherwise occur on account of the vomiting.

This band, it is stated, will also aid in aborting the paroxysmal stage as it is manifest that the paroxysms are very much milder when the band is worn. There is some liability, unless care is observed, to an eczema which soon disappears when the band is taken off.

Medicolegal.

Unnecessary Operation to Produce Sterility Warranting Refusal to Marry.—One of the defenses to the breach of promise case of Edmonds vs. Hughes was that at the time the party sued promised to marry the party suing the latter was a woman in possession of the power of procreation, and was able to bear children; that after the promise was made she voluntarily submitted to and permitted an unnecessary surgical operation to be performed upon her body, by which she was rendered unable to procreate or bear children, and would forever remain so. If this was true, the Court of Appeals of Kentucky holds that it constituted a valid bar to the woman's alleged cause of action for breach of promise to marry her.

Demonstration of Injuries to Jury by Expert Witness.—The Court of Appeals at St. Louis, Mo., says that, in the personal injury case of Rice vs. the Wabash Railroad Company, the company was loud and vehement in its complaint against what was termed the anatomical and surgical lecture of the suing party's expert witness in describing and illustrating, by reference to that party's nose, the nature of the injuries sustained. But, if the method adopted by the party suing in presenting such testimony was effective and potent, the court says, the presiding judge was clothed with broad discretionary authority in the proper course and seemly conduct of trials before him, and, in the absence of clear abuse of such power, the court is inclined to defer to his action, and assume that he properly controlled the management of the trial, and it is not disposed to hold that the manner in which the injuries of the party suing were demonstrated by the physician to the jury constituted reversible error.

Bases of Non-Liability for Negligence of Physicians.—The Court of Appeals at St. Louis, Mo., says, in the malpractice case of Haggerty vs. the St. Louis, Keokuk & Northwestern Railroad Company, that the later judgments have apparently renounced the notion that whatever immunity from the law of respondeat superior (the superior or master must answer) is enjoyed by eleemonsynary trustees and corporation is allowed in order to protect trust funds and public money from outlays not contemplated by the donor or the legislature. Recent cases which exonerate charitable institutions from liability for certain negligent acts of employes, such as unskillful treatment or nursing, appear to do so on the theory that a patient, in accepting gratuitious attention of that kind, assumes the risk of injury by the carelessness of employes. But it was obvious, the court says, that neither the railroad company sued nor its relief department was the trustee of public funds put into its hands to use in a prescribed manner. Nor, in view of the regulations provided for its government, could the relief department be classed as a charity without doing violence to every significance that word bears, either in popular or legal usage. The fund administered was not a gift by the employes, who made contributions; much less by the railroad company, which did not make any unless a deficit occurred. The fund was made up from sums contributed by the members for their mutual benefit, and to be enjoyed by them if they suffered from sickness or accident. It was, in effect, a provision made by the employes to insure a stipend for them to live if they were disabled, and a benefit to their families if they died. In addition to this, if disabled by accident, their medical attendance was paid out of the fund. This strikes the court as a purely business arrangement on the part of the employes of the railroad company. To call the enterprise a charity on the part of the company itself is extravagance, when it is noted that one of its purposes, as carved in high relief on the face of the regulations, is to prevent damage suits. Enterprises much more benevolent have been excluded from the list of charities by the courts. To give such organizations as this one the legal status of a charity, and determine the employer's liability on that theory, is not only illogical, but must ultimately prove pernicious, by subverting to commercial and selfish uses principles of law designed to protect only benevolent institutions. Wherefore the court declines to accede to the argument that the party suing here for malpractice had no case, because. if treated by the company's physicians, he was the recipient of charity. Unquestionably, if it undertook to supply him with surgical attendance, or deprived him of a choice in the matter, it was bound to employ reasonable care to get men of average skill. But its obligation ended there, though not on the principle that it was operating a charity. In cases like this the surgeon is not regarded as sustaining in full measure the relation of servant to the railway company, which carries the right of direction and control as to the mode of doing the work. There is little likelihood of railway companies or other employers becoming careless in the selection of physicians to wait on employes; and. as their business managers and superintendents are not selected for their expert knowledge of medical and surgical matters, they are unfit to supervise the work of physicians, and therefore the doctrine of respondeat superior, or that masters are answerable for the wrongful acts of servants, cannot well be applied to such matters. These, the court thinks, are the real reasons why the courts have refused to extend the rule to them.

Requisites to Charging Wife for Medical Services.—The Appellate Term of the Supreme Court of New York says that the sole question in the case of Hazard vs. Potts was whether the wife there sued was liable for medical services which it was admitted were rendered to her husband and his family. The court says that the liability for such services was presumptively and primarily on the husband, unless the wife, by express agreement. charged herself personally with the same. Therefore, in order to charge her with liability, it was necessary to prove that she undertook liability, and that such services were rendered on her credit. The evidence showed that the services were rendered on the request of different members of her family; but, even if she had requested the rendition of any of them. such request, the court holds, would not have raised any implied promise on her part to pay for the same; but, on the contrary, since all the services were necessary for her family, and the physicians knew it, the presumption would be that she had made such request as agent of her husband. The record was barren of any evidence tending to show that the services were rendered upon her personal credit, or that the physicians, when they rendered them, told her that they would look to her for payment of the same. Under these circumstances, no recovery against her could be maintained, unless some effect could be given to testimony adduced that. after all the services had been rendered, she made two payments on account, and thereafter asked for a bill, and said she would probably pay the claim in installments; subsequently she wrote one of the physicians that as soon as she was able to go to New York she would call, and that she meant by that letter that she wanted to go there for the purpose of borrowing money from a friend; thereafter, one of the physicians and his brother called at her residence, where they at first met her husband, who excused himself by saying that his wife would be in presently and talk with them, and that she then appeared and stated that they wanted to pay the bill if given time to do so, and that she was willing to give a note, but that she could not speak for her husband, and that a day or two thereafter she told a lady that she would pay the bill. The wife, however, denied that she promised to pay such bill, but, even if she did, the court holds, such promise would not. for obvious reasons, enable an action to be maintained thereon, but might, at most, be some evidence of an agreement at the outset to pay, if nothing appeared to the contrary. Such question, however, need not be considered, since it appeared from the evidence that the physicians did not have any conversation with her about payment for the services until after they had been rendered. There was therefore no evidence in the case from which it might be legitimately inferred that the services were rendered upon the agreement of the wife to be personally liable for them. On the contrary, the bills rendered by the physicians were made out to the husband, which facts strongly tended to show that the services were rendered upon his credit alone. Hence. in the absence of an original agreement to be personally liable, the wife's alleged subsequent promise to pay for them. even if established, must be presumed to have been made in her relation of wife, and in the exercise of her implied agency to obtain medical attendance for the family. Wherefore, in the absence of proof showing an agreement on her part to be personally liable, the court holds that a recovery against her was not warranted.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

July 11.

1 *One Hundred Consecutive Cases of Myoma of the Uterus. Guy L. Hummer.
2 *Selection of the Anesthetic: Method of Administration: Complications Encountered and How to Deal with Them. George Spencer.
3 *Observations on the Diagnosis of Nasal Sinusitis. Walter J. Freeman.
4 A Case of Double Curvature of the Spine with an Interesting Complication. Edward J. Wynkoop.
5 Two Cases of Appendicitis and Some Deductions Therefrom. E. R. Secord.
6 The Duties of the School Teacher in the Combat of Tuberculosis as a Disease of the Masses. S. A. Knopf.

1. **Uterine Myoma.**—Hunner's article is an analysis of 100 cases, including 31 colored and 69 white women. The admissions of colored women are only about one-sixth of the total, showing that myoma is nearly twice as frequent in the colored as in the white race. The youngest patient was 24, the oldest, 67. The majority were in the fourth and fifth decades of life. He remarks in regard to the caution required to distinguish between fibroid and pregnancy. Of the chief symptoms, 35 patients complained of abdominal tumor. In 2 cases this was the only symptom. Pain in the abdomen, pelvis or diaphragm was complained of by 53 patients. An increased menstrual flow was noted in 41 cases. Copious hemorrhages at or between the menstrual periods occurred in 15 patients, making 56 per cent. with hemorrhagic loss of blood. In 9 cases the hemoglobin at time of operation was 46 per cent. or lower. These all recovered in spite of the anemia. In the older patients hemorrhage was a prominent symptom in the majority and in only the minority of these cases was it of the menstrual type. One patient had undergone a double oöphorectomy eleven years before, with only temporary relief. Gastric symptoms were prominent in 6 cases. A number of patients suffered from complications. Carcinoma of .the fundus was present in 3, of the cervix in 2 cases and sarcoma was present in 2, making 7 per cent. of malignant disease. Adenomyoma was present in 2 cases. Many cases exhibited complications outside the uterus and tumor involving the uterine adnexa. Six patients died, as against only 2 per cent. in ordinary gynecologic operations. In 5 of these there was serious pelvic inflammatory disease and complications. The operations performed were myomectomy in 19; panhysteromyomectomy in 14; supravaginal hystero-salpingo-oöphoromyomectomy in 40 cases, and supravaginal hysteromyomectomy, leaving one or both ovaries, in 16; vaginal myomectomy in 5 cases, and vaginal hysteromyomectomy in 6. Nine patients were treated by the method of bisection. He thinks if we can find in a series of 100 cases such a record of suffering, sterility, miscarriage, etc., one will not wonder that he announces his attitude toward myoma of the uterus as radical.

2.—This article appeared elsewhere. See The Journal, xl, title 155, p. 1263.

3. **Nasal Sinusitis.**—The diagnosis of inflammatory conditions of the frontal, antral, ethmoidal and sphenoidal sinuses is discussed at length by Freeman, who thinks that the transillumination test has been too much relied on. Frontal sinusitis is generally easily diagnosed. though there are conditions in the absence of pain, usual with free drainage, where our attention may not be directed to the proper locality of the suppuration. In antrum inflammation no sign has been as useful to him as the discovery of pus flowing over the upper surface of the posterior end of the inferior turbinal. He has also been able to make a tentative diagnosis of sinusitis by

certain well-defined odors, those of sour pus and of sulphuretted hydrogen. The symptom of intermittent cacosmia is very significant of sinus suppuration, generally of the antrum. Syphilitic necrosis in the sinus, however, may be an exception. The presence of discolored molars or bicuspids is always significant and suspicious. A capped six-year molar is always suspicious. Any tooth from the wisdom to the central incisors may be the cause of antrum inflammation. In endeavoring to wash out the antrum through the normal opening, he has found it of advantage to explore first with a delicate cotton wound-probe, the point curved downward, and he has also devised an irrigation cannula which has proven of great service to him. It is made of hard rubber and easily molded to any shape by heating and is not so uncomfortable as a metal tube. He thinks the ethmoid is not infrequently credited with trouble which is due to the antrum, and before sacrificing the middle turbinal it is due the patient to at least suspect the antrum and try irrigation. Except in atrophic rhinitis or in rare cases of deformity of the septum with accompanying lack of development of the turbinals, a direct flow of pus from the sphenoid opening can seldom be seen. Edema of the mucous membrane at the upper portion of the septum posteriorly should direct our attention to the sphenoid. The statement that the formation of crusts in the vault warrants a probable diagnosis of sphenoid disease, as asserted by Schaeffer and others, is, he thinks, misleading. Vertigo and pain at the occiput, deep in the eyes and in the ears, may be caused by disease of any one of the sinuses, and the distressing pain across the bridge of the nose considered so characteristic of ethmoid disease is repeatedly caused by manipulations within the sphenoidal cavity. In regard to ocular manifestations, he quotes Posey, who says that the general symptoms of asthenopia, which are obstinate and not relieved by glasses, should direct attention to the nasal sinuses. Freeman advises against the use of suprarenal extract in examination for sinus suppuration, as the blanching of the surfaces prevents the recognition of small amounts of secretion. He has found it useful to have the patient close the opposite nostril and sniff and blow alternately. This draws the pus rapidly from the sinuses and saves time. The morning is the best time for detecting pus from the frontal and ethmoids and the evening for secretion from the antrum and sphenoid.

New York Medical Journal.

July 11.

7* Report of a Case of Pernicious Anemia with Marked Ptosis of the Abdominal Viscera. C. Bertram Gay.
8 *Humeroacromial Suture for Habitual Dislocation of Shoulder. Carl Beck.
9 A Device to Protect Against Infection in Operations on and Around the Rectum. J. M. Lynch.
10 *Intravascular Antisepsis. (Concluded.) Charles G. Barrows.
11 Mental Aberration Consequent on Pelvic Disease—Cases. L. G. Hanley.
12 *The Source of Typhoid Fever. Charles F. Davidson.
13 The Peculiar Case of Lam ah Chan. J. A. Guthrie.
14 *Radiotherapy in Enteritis and Colitis. Sinclair Tousey.
15 *Some Observations on Stacke's Operation. Thomas R. Pooley.

8. **Shoulder Dislocation.**—Beck reports a case where, on account of a recurrent humeroacromial dislocation of the shoulder, he operated by exposing the acromial surface of the capsule, which was found to be so much relaxed that a fold could be taken up and contracted by making a purse-string suture in it. At the same time a hole was drilled into the head of the humerus and into the acromion and a medium silver wire carried through it to ensure retention of the head by adhesion formation. There was no evidence of rupture of the supraspinatus muscles, or infraspinatus, causing rupture of the capsule or any abnormality of the joint. The operation was followed by no reaction and when the wire was removed five weeks later the result was good. Six months after operation it appears perfect.

10. **Intravascular Antisepsis.**—Barrows continues his article on the formaldehyd treatment of septicemia and mentions its advantages. He quotes, in conclusion, from Sajous, that it has an effect in stimulating the adrenal system if used in moderate doses.

12. **Typhoid Fever.**—Davidson has studied a number of cases of typhoid occurring in his practice and finds in every instance evidence of a water-borne infection. He does not pretend to say that infected fruit and vegetables might not sometimes be responsible; they may lie on the ground and come in contact with infected water from some source or other, but so far as his observations go, he has not been able to trace a single case to anything except an infected well.

14. **Radiotherapy in Colitis.**—Tousey has begun the use of electrotherapy in certain cases where there is a chronic condition of pain or discomfort with frequent mucous and occasionally bloody discharges and false membranes, and which have failed to yield to the use of intestinal antiseptics. The way he made the applications has been by having the patient lie flat upon an examining table with the surface of the abdomen exposed, and with an *x*-ray tube supported eight inches from the surface, with the rays directed principally to the painful part. At this distance the exposure may last for three to five minutes for the first treatment and may be gradually increased in duration. He takes precaution to use a large tube, 40 cm., and to avoid allowing the platinum disc to become red hot. To avoid this it is necessary to turn off the current several times during a long exposure. We must consider the character of the parts exposed to the light, the degree of vacuum in the tube as well as the duration and frequency of the applications. The parts which it is not desired to influence should always be protected by sheet-lead or something else opaque to the *x*-ray. In addition to the *x*-ray proper he has made other applications by means of glass vacuum tubes connected by a thoroughly insulated wire with one pole of the great Ruhmkorff coil, which should form part of the *x*-ray outfit. When the current is turned on such a tube is filled with a wave of light passing from the rheophore toward the bulbous extremity, which is in contact with the skin, and the patient receives, with hardly any sensation, a wave-like discharge of very high voltage and considerable amperage. The connection is with only one tube of the coil. The tube is provided with an insular handle for the use of the operator. If removed from the skin a shower of sparks passes from the vacuum tube and does not seem to produce as good results as the direct contact, and is more disagreeable. Direct application is almost without sensation, but the patient can give another person quite a spark by touching him. He has had his patient, more or less, completely insulated, but is not certain as to the importance of this point. The cases under treatment seem to show an improvement, perhaps on account of the novelty, as the author suggests, but his expectation of lasting benefit is not so much on account of the germicidal action of the *x*-ray as on account of the stimulating and altering effect of the combined application of the *x*-ray and the high tension discharge from the vacuum tube.

15. **Stacke's Operation.**—The radical mastoid operation generally known as Stacke's is criticised by Pooley, who points *out the following dangers of the procedure:*

1. The wounding of the facial nerve, dura, lateral sinus and the semicircular canals.

(*a*) The facial nerve may be wounded on account of its anomalous position, carelessness in chiseling too near the floor of the external canal, or the too tight packing of the wound.

(*b*) In using the middle ear curette it must not be forgotten that the tympanic walls are often very thin from necrosis and the internal carotid artery, as well as internal jugular vein, are imperfectly protected and liable to be penetrated.

(*c*) In carrying the operative procedure upward and backward the semicircular canals must be avoided.

2. In contemplating this operation it must be taken into account that a radical cure is by no means always obtained by one operation. A second operation, or even a third or fourth, may be necessary, in order to obtain a complete cure of the otorrhea.

3. The length of time required for the healing process may vary from three to six months. And lastly,

4. The possibility of permanent impairment of hearing in patients who, before the operation, could hear fairly well.

Considering these and the uncertainty of cure, together with the long duration of after-treatment, he thinks every case of chronic otorrhea should be carefully studied before being subjected to such severe operative procedure. While he does not wish to detract from the merits of the operation, he does not think all cases of chronic otorrhea should be indiscriminately so treated. In spite of the present opinion against the cure of otorrhea by medication, removal of polypi, and intratympanic curetting, he holds that each of these methods often meets with success. Many cases of chronic suppuration of the middle ear can be healed by vigorous antiseptic treatment, removing granulations, cholesteatoma, etc. He summarizes his view as to when operation should be performed as follows:

> The objective indications may be grouped under two forms: any case of reinfection or of a rapid extension of a chronic otitic process, or whenever a grave complication is threatened; the indication is then for immediate operation.
>
> The indication is not immediate when the patient suffers little or no pain and there is no striking symptom in the mastoid, but even here the indication may be operative. If the osseous lesion is extensive. The subjective symptoms are: persistent and recurrent pain in the ear or mastoid process, with persistent and fixed pain in the parietal or occipital region, increased by percussion, which frequently points to temporal or cerebellar abscess; vertigo, either permanent or intermittent attacks, which may be due to erosion of the external semicircular canals, and well-marked brain symptoms, such as headache, heaviness, pressure, torpor, loss of consciousness, etc.

Medical News, New York.

July 11.

16 *Stomach Vertigo. Charles S. Fischer.
17 *Notes on the Selection of a Climate for the Treatment of Tuberculosis. Russell Bellamy.
18 *Hypnotism and Hysteria. Wm. B. Pritchard.
19 *Dry Superheated Air in the Treatment of Septic Infection. Clarence E. Skinner.
20 *The Sanatorium Treatment of Tuberculosis. (Concluded.) Herbert M. King.

16. **Stomach Vertigo.**—The various theories of stomach vertigo are reviewed by Fischer, who thinks it is unproven that there is any relation between abnormal gastric secretion and vertigo. He has taken from his own records a number of cases bearing on this point, and finds that both subacidity and acidity may exist with this symptom and not much difference in proportion from those that occur with normal gastric findings. There is very little relation between gastric acidity and vertigo in his opinion. The simplest clinical indications of gastric irritability are pain and nausea, and it would be interesting to know in what proportion of vertigo symptoms these two symptoms are pronounced. From his own observations it would seem that very little causative relation exists between gastric irritability and vertigo in inflammatory affections of the stomach, nor does he find that atony or gastroptosis seem to have very marked relations, though each may have its effect. That vertigo should be associated most frequently with atony is comprehensible, as atony is the most frequent pathologic condition in chronic gastric disease. Autointoxication is also doubted, as it can not explain all cases. He makes the classification of vertigo into: 1. Those in which it is intense and is the only prominent nervous system. 2. Those where it is associated with intense palpitation, precordial fear, dyspnea, and possibly syncope, following isolated acts of indiscretion in diet. 3. Cases where it occurred as a momentary sensation in the course of well-defined pathologic conditions in the stomach. The first class assumes the existence of a chronic gastric disease with or without dyspeptic symptoms. There are no specific gastric states with which this type can be directly connected and fortunately the cases are rare. The second type is more frequent, but can hardly be justifiably called gastric vertigo, for the latter is not the principal feature of the attacks. Many of them occur very soon after meals, thus eliminating the possibility of fermentative and putrefactive changes. The third class comprises those cases in which the vertigo is associated with chronic gastric diseases as a momentary sensation. These are numerous, but the causative relation of gastric disorder is often very obscure. There is generally an accompanying neurosis. The author is inclined to think that the vertigo is due either to external influences affecting the special senses, or originates in the central nervous system as the result of a predisposition engendered by mental depression or irritability. Fischer seems to consider that the stomach has been credited with more than is properly its due in these cases.

17. **Tuberculosis.**—Bellamy describes the climates of New Mexico, Colorado and Arizona, and in summing up their advantages offers the following points: 1. Consumptives with a rapid breaking down of lung tissue should avoid high altitudes, although he has heard of many cases being taken 2, those with especially developed cardiac lesions, with a marked tendency to a disturbance of cardiovascular balance. 3. Those completing the fifth decade, where the capacity of muscular exertion is considerably limited, should avoid high altitudes, although I have heard of many cases being taken to Colorado, recovering and taking up their life there. 4. Laryngeal cases do better at the low altitudes.

18. **Hypnotism in Hysteria.**—Pritchard advocates the utility of hypnotism, although there seem to be some contraindications such as delusional insanities and organic and toxic nervous diseases.

19. **Superheated Air in Sepsis.**—The good effects and mechanism of superheated air in cases of sepsis are described and illustrated with cases by Skinner. The mechanism is, according to him, through the reflex stimulation of the vasomotor tracts relieving stasis and lessening pain, augmenting the nutrition by stimulation of the trophic centers, the raising of temperature, disturbing the conditions favoring propagation of micro-organisms and stimulating the integumental emunctories to increased function. He doubts there being any danger from local hot air applications in localized infections. He has never heard a logical defense of this charge and has never heard of an authentic case where there was any satisfactory evidence that such a result was properly attributable to hot air. There is no hard and fast rule as regards the duration of application and the intensity of the heat. Overstimulation should be avoided. In non-febrile cases and those exhibiting only a low degree of febrile action, it is usually an indication that sufficient influence has been induced when the mouth temperature has been increased 2 F. above the normal or the pulse has been accelerated to 120 or 130 beats. Other measures should also be employed, such as electricity, the judicious regulation of diet and of the excretory functions, proper surgical dressing, etc. While hot air is a good thing in septic infection it is not invariably a sure thing. It will cure unaided and alone many cases. Others will require all the remedial sources at our command.

20. **The Sanatorium Treatment of Tuberculosis.**—King concludes his article and sums up that sanatorium treatment consists in placing the patient in the best possible environment to aid resistance and counteract the effect of waste and toxins. This is done by: 1. Securing increased sunlight; 2, enforced rest in the open air day and night; 3, increased consumption of proteids; 4, accurately-governed exercise; 5, constant and unremitting medical supervision. If this can be had at home, so much the better, but he has rarely found it possible.

Medical Record, New York.

July 11.

21 Some Recent Methods of Intestinal Anastomosis. George G. Ward, Jr.
22 *The Physician and the Ophthalmoscope. Francis Valk.
23 *The Cystoscope; Its Indications and Contraindications in Genito-urinary Diseases. Follen Cabot and Henry G. Spooner.
24 A Case of Paraffin Injection Into the Nose Followed Immediately by Blindness from Embolism of the Central Artery of the Retina. Lee M. Hurd and Ward A. Golden.
25 Some Practical Remarks on the Management of Breech Presentations. Joseph Kucher.

22. **The Ophthalmoscope.**—Valk describes the methods and use of the ophthalmoscope and what it reveals, and calls attention to the importance of the physician's understanding the use of this instrument.

23. **The Cystoscope.**—Cabot and Spooner describes the cystoscope and its use, pointing out that the physician must learn not only how to insert the instrument, but also how to interpret the images seen. It should never be used until we have acquired an accurate knowledge of the length and caliber of the urethra and tested the capacity of the bladder. It is in bladder diseases that its principal value exists, though it may be of use as an aid in the diagnosis of diseases of the prostate gland. In case of foreign body it may aid a doubtful diagnosis. It is contraindicated in nearly all cases of acute cystitis and probably in tuberculous cystitis, though it can at least tell us the extent of the involvement, when it can be employed without too much aggravation of painful symptoms, and it alone reveals ulceration.

Boston Medical and Surgical Journal.

July 9.

26 *Subparietal Injuries of the Kidney. (To be continued.) Francis S. Watson.
27 A Case of Acute Epididymitis in an Undescended Testicle, with Gonococci Demonstrated in the Excised Organ. Fred T. Murphy.
28 The Nernst Lamp for the Production of Ether Waves for Use in Therapeutics. William Rollins.
29 A Case of Malignant Endocarditis with Meningitis, Pneumococcus Infection. L. C. Miller.

26. **Subparietal Injuries of the Kidney.**—An experience of 6 cases led Watson to investigate the subject. He has collected, formulated and analyzed clinical data from 660 cases, including all previously published series of importance and all but about 78 individual cases scattered through the literature, which are inaccessible to him at this time. Kidney lacerations may be due to muscular action alone and to apparently very inadequate force. Eleven cases of this character were found and are given in brief. In 20 cases the injury was the result of blows upon the abdomen. Where a single intraperitoneal organ was injured in association with the lacerated kidney, in all instances it was on the same side as the kidney injured. Abdominal symptoms, such as are usually associated with peritonitis, occurred in 18 cases, in 8 of which operation demonstrated the absence of any intraperitoneal complication, and in the other 10 the symptoms subsided so rapidly as to exclude such. Such symptoms are not infrequently seen in conditions which appear to be abdominal muscular contusions only. In a larger number of cases, the abdominal symptoms did represent intraperitoneal complications. Tumor in the loin appeared in 111 out of a total number of 486 uncomplicated cases, chiefly caused by hemorrhage in the peritoneal tissues. In other cases the tumor was due to traumatic hydronephrosis or perinephritic abscess. When due to perirenal extravasation it may appear almost immediately and frequently within one or two days. Subparietal injury of the kidney is rather an infrequent condition. Out of 2610 autopsies at the Middlesex Hospital in ten years there were but 12 cases. Other hospitals show similar proportions. Nevertheless it is evidently the most frequent resulting lesion in the abdominal viscera in cases of abdominal contusion, as shown by Makins' table of such cases. In a few cases it may be due to direct impaction of the ribs. In others it would seem probable that it may be due to hydraulic pressure acting through the full vessels and pelvis and causing rupture, as alleged by Küster, quoted by Morris. The regenerative power of the organ and its ability to keep up the function under such circumstances is remarked upon. The hemorrhage may occur either as hematuria, perirenal, intrarenal or intraperitoneal, the hematuria being the most common and present in at least 80 per cent. of all cases. It may last for considerable periods, even up to fifty days or more as in one case reported, but the average time is eight days according to records. Perirenal hemorrhage may be spontaneously arrested by pressure on the parts or by thrombus formation. Injury to the renal blood vessels occurred in 4 cases. Morris has collected 19 cases of aneurism of the renal vessels. Suppuration seems to be variously estimated as regards frequency. It was noted in 68 cases out of 486 uncomplicated ones. The most fatal factor, however, was hemorrhage, which was responsible for 25 deaths out of a total number of 112 uncomplicated cases which ended fatally. Laceration of the peritoneal or intraperitoneal organs is the most fatal complication, and is usually due to intraperitoneal hemorrhage. The total number of cases of this complication was 62, and the total number of deaths 48, intraperitoneal hemorrhages causing death in 36 of these 48, or a little over 66 per cent. Twenty-five of the 112 deaths of the 486 uncomplicated cases were due to suppuration. Anuria caused death in 10 of the series in which but one kidney was injured and the other normal. In several others, death resulted from laceration of both kidneys and in 4 there was only one kidney. There were 9 deaths referable to peritonitis in the uncomplicated cases, 5 of these having injuries of the abdominal organs associated with that of the kidney. As regards treatment, it would appear from analysis of the 487 uncomplicated cases that the smallest percentage was in those operated on otherwise than by nephrectomy; the percentage here was only 7. Expectant treatment gave a little better percentage than nephrectomy. (The article is to be concluded in a coming number.)

Cincinnati Lancet-Clinic.

July 11.

30 *Absence of Gastric Juice; Its Significance and Treatment. Henry W. Bettman.
31 Surgery of the Prostate, Pancreas, Diaphragm, Spleen and Thyroid. (Continued.) B. Merrill Ricketts.

30. **Achylia Gastrica.**—This disorder, which is generally a benign one, is described by Bettman, who calls particular attention to the peculiar vomiting and characteristic emptying of the stomach after test meals. The particular type of vomiting, characteristic of achylia, as he portrays it in two typical cases, has not been described by other writers. It occurred from two to three times every twenty-four hours, fluid being ejected with marked force and without warning. The author remarks that only under certain conditions is it difficult to distinguish achylia from cancer. In the latter, pepsin can be demonstrated in the large proportion of cases, and the actual dyspeptic symptoms are very much more marked. The blood changes are characteristic, and hematemesis, tumor, belching, lactic acid and the bacteria of the gastric contents are all wanting in achylia. The chief symptom in common is progressive loss of weight. In all cases of achylia it is well to think of the possibility of cancer, though so far as he knows no case has been reported where cancer was its result. In treatment we should consider first the activity of the motor function and that intestinal digestion is usually sufficient. Treatment, therefore, consists in an intelligent effort to ignore the stomach altogether. Where gastric irritability exists, lavage is indicated, and irritating substances should be avoided in the diet. Where the symptoms are chiefly intestinal, the diet should be directed entirely to them. Bettman finds that meat is excellently tolerated. He has had cases recover completely on a diet in which meat and raw eggs predominated. Flatulence may contraindicate milk; in other cases it may be well borne. Drugs are not indicated except for special conditions.

St. Louis Medical Review.

July 4.

32 Practical Points in the Treatment of Angina Pectoris. A. C. Griggs.

Virginia Medical Semi-Monthly, Richmond.

June 26.

33 *The Gall Bladder as a Source of Danger. M. M. Johnson.
34 Adrenalin in Eye, Ear and Nose Work. T. W. Moore.
35 Some Cases Illustrating the Treatment of Diarrheal Affections with Tannigen. N. G. Price.
36 The Country Practitioner and What He Can Do for His Patients as a Specialist. John R. Cook.
37 Heat Exhaustion. William F. Waugh.
38 Some Experience with Diphtheria and Its Treatment. O. M. Patterson.
39 Notes on Syphilis. Presley C. Hunt.
40 Some Observations on the Treatment of Pulmonary Phthisis in Private Practice. H. J. Chapman.
41 Successful Case of Pigskin Grafting. Wm. Flegenheimer.
42 The Mineral, Animal, Vegetable and Spiritual Kingdoms of Food. Ephraim Cutter.

33. **The Gall Bladder.**—Johnson holds that the gall bladder is useless and dangerous, and that it should be removed in all cases where the biliary and common ducts are unobstructed. The most important factor in the production of gallstones is the lack of proper drainage, due to the anatomy of the parts or the presence of bacteria. Cholecystitis is the most dangerous condition for which we are called on to operate, and it is the only one in which a stone lodged in the cystic duct should be left for a secondary operation. He does not think there is any history of cases of reformation of gallstones after operation.

Interstate Medical Journal, St. Louis.

May.

43 *A Method for Radical Cure of Vesico-vaginal Fistula Without Loss of Vesical Tissue. R. F. Amyx.
44 *The Healing of Granulating Surfaces by Application of Cobalt-aurate Animal Membrane. Warren B. Otten.
45 Cerebral Softening or Encephalomalacia. John Punton.
46 Extrauterine Gestation—Report of Three Cases. C. E. Ruth.

43. **Vesicovaginal Fistula.**—Amyx describes a method of treating vesicovaginal fistula by dissecting a circular flap around the fistula and inverting it and stitching it into the bladder by carrying the stitches inward through the urethra. It is useful for small fistulas. In larger openings, one-half to

one inch in diameter, he would recommend a wider dissection of the circular vaginal flap The after treatment consists in inserting a soft rubber catheter in the bladder for drainage, and at the end of fifteen days the interrupted silkworm gut sutures are removed The catgut anchor sutures attached to the pubes are absorbed on the fourth or fifth day. He thinks the operation has the advantage of no loss of vesical tissue A portion of the vaginal mucous membrane is used to lengthen the tract so that a long invaginated tract can be obtained The large area of freshly exposed surface is obtained for the purpose of repair in the invaginated portion

44 **Cobalt-Aurate Membrane.**—Outten recommends the use of gold beaters' skin put in hot sterile water, from 98 to 100 F, then inserted into a solution of cobalt and gold chlorid, 1 ounce and 1 dram respectively in 10 ounces of distilled water, and 2 ounces of oil of cassia is added after the membranes are immersed They turn a dark, purplish hue, showing a deposition of the chemical salts They are kept in wide mouthed, glass stoppered bottles, and when used on granulating surfaces are cut out the size of the surface, after being washed in alcohol and hot water to remove the cinnamon oil, they are punctured and put over the wound, and then covered with six or eight layers of sterile gauze Another piece of membrane is applied on top of the gauze, and above this a bandage of sterile cotton. The dressing thus applied may be allowed to remain undisturbed for at least forty eight hours. Within twelve or fifteen hours after the application of the cobalt aurate membrane on any granulating surface, the membrane in contact with the granulation is completely absorbed with no vestige remaining. The granulations assume a bright, vivid, healthy hue and the epithelial border appears to be stimulated in a remarkable manner The chemical agents contained in the meshes are deposited on the surface of the granulation As an aid in the perfect establishment of skin graft, he thinks the method is ideal

Chicago Medical Recorder.

June 15

47 *The Surgical Pathology of Genu Varum and Genu Valgum Wallace Blanchard
48 *Continuous Intra uterine Irrigation in Grave Puerperal Sepsis with Report of Case Edson B Fowler
49 The Principles of Medical Gymnastics Walter M Fitch
50 Report of a Case of Traumatic Tetanus Treated with Antitetanus Serum W A Kuflewski
51 Report of a Case of Congenital Pulmonary Stenosis with a Discussion of the Case Ellis K Kerr

47 **Genu Varum and Genu Valgum**—From a study of these conditions with illustrations by skiagrams, etc, Blanchard holds that epiphysiolysis is hardly worthy of consideration as a remedy as compared with either osteotomy or osteoclasis That osteotomy has some slight dangers from which osteoclasis is free, and the comparatively prolonged time required for bone union and recovery should condemn it when osteoclasis is available

48 **Puerperal Sepsis**—Fowler reports a case of puerperal sepsis treated by continuous intrauterine irrigation, and gives the advantages of the treatment He does not think there is much danger of forcing septic fluid through the fallopian tubes with the pressure used No case of air embolism has been reported, though other emboli have been in three cases Hemorrhage is not serious, and while puncture of the uterus has occurred twice by the use of the hand bulb syringe, no such accident has occurred with the fountain syringe Most of the symptoms of shock may be prevented if the irrigations are taken slowly with the cervix dilated and water at 100 F, gradually lowered as needed He thinks all serious objections to this treatment can be overcome by the use of sterile water at a proper temperature and pressure for the case in hand

Journal of Cutaneous Diseases, New York

July

52 A Case of Chronic Purpuric Erythema (Eight Years Duration) with Pigmentation of Skin and Enlargement of Liver and Spleen William Osler
53 * White Spot Disease ' James C Johnston and Samuel Sherwell
54 *Sarcomatosis Cutis Grover W Wende
55 *Parapsoriasis L Brocq

53 **White-Spot Disease**—Johnston and Sherwell report a case of this condition which they find to be a pure degeneration of the skin, limited to the papillary body and the upper portion of the reticular layer The whiteness is probably due to the translucency of degenerated skin, which is opaque in the reflected light The disease should be classed with the atrophies, next to symmetrical atrophy, which perhaps closely approaches it The name "white spot disease," which Westberg gave it in 1901, is characteristic enough to be retained The spots are arranged like beads on the chest, very slightly raised above the surface and smooth The color is the dead white of snow In the course of time some of these undergo involution and scaly separation There is left an atrophic area exactly corresponding to the spot which preceded it

54 **Sarcomatosis Cutis.**—Wende's conclusions are given as follows:

1 Sarcomatosis cutis (Kaposi), which is now designated as sarcoid growths of the skin is clinically recognized as having its own individual characteristics 2 It chiefly attacks adults The initial lesions are small papules deeply seated in the skin These gradually develop to a certain size, when some break down, suppurate and end in exuberant granulations 3 Histologically it consists of a round cell infiltration primarily existing in the deeper layers of the skin around the blood vessels, hair follicles, sebaceous glands and lymphatic spaces While this is suggestive of true sarcoma it may present the inception of granuloma The etiology is at present obscure, apparently we have to do with an infectious disease 4 While there is a strong resemblance microscopically to mycosis fungoides the clinical appearance is so entirely different that one need not hesitate to exclude that affection from consideration, it being separate and distinct from this The theory of syphilis is contraindicated by the clinical appearance and therapeutic test Lymphoderma and blastomycetic dermatitis are excluded by the microscopical findings Carcinomatosis cutis is also ruled out by the microscope, although the clinical appearances in the two are very similar 5 Taking into consideration the spontaneous disappearance of the tumors, the limitations of the growths to the skin without any remarkable tendency to infiltration of the surrounding tissue, the non involvement of lymph nodes or metastasis, and the fact that the malady remains a cutaneous disease, the conclusion is forced on us that the present case far more closely resembles granuloma than true neoplasm

55. **Parapsoriasis.**—This name is given by Brocq to a type of dermatoses first described by him as *erythrodermies pityriasiques en plaques disseminées,* which he subsequently included under the term parapsoriasis He gives the history of the affections They have certain features in common. Histologically this group is characterized by an infiltration of round cells about the dilated papillary vessels, flattening of the papillæ and a marked tendency to their disappearance; by a marked edema of the upper layers of the derma, and of the epidermis; by almost complete disappearance of the germinative layer; by a dilatation of the intracellular spaces in the prickle layer; by an edema of the granular layer, which is wanting in places, by the absence of the stratum lucidum, and by the absence of nuclei in the horny layer, except over the places where the germinative layer is absent The lesions are characterized by their long duration; the slowness of their evolution, their torpidity; the slight disturbance of the general health, absence of itching, and the superficiality of the process They are very resistant to all local medication. He describes the three following subdivisions 1 A variety closely related to psoriasis, parapsoriasis guttata, 2, one intermediate between lichen and psoriasis, psoriasis lichenoides, and 3, parapsoriasis in patches, closely allied to seborrhea psoriasiformis The etiology and pathology of these are obscure They seem neither contagious nor epidemic They may appear at any age, in any class, and are slightly more frequent in women than in men and in youths and adults To cause them to disappear he has seen nothing to equal the cacodylate of soda, which is often inert He has had some benefit from the glycerites locally, but the best results have been obtained through an ointment containing 10 per cent of pyrogallic acid, to which was added 2 5 per cent of salicylic acid This may have to be pushed to the limit of tolerance, care being taken to avoid general intoxication, keeping the patient under close supervision

Journal of Nervous and Mental Disease, New York.

July

56 *A Case of Progressively Developing Hemiplegia Later Becoming Triplegia Resulting from Primary Degeneration of the Pyramidal Tracts Charles K Mills and William G Spiller
57 *The Results of Surgical Treatment of Brain Tumors M Allen Starr
58 *A Contribution to the Pathology of Paramyoclonus Multiplex (Friedreich's Type) J Ramsay Hunt

56. **Progressively Developing Hemiplegia.**—From the report of cases here studied and others from the literature, Mills and Spiller conclude that there is a form of progressively developing hemiplegia usually of the ascending type, sometimes becoming triplegia, or even quadriplegia, due to progressive primary degeneration of the pyramidal tracts, which begins on one side and may extend to the other. The clinical picture may be produced by other lesions, but they hold that they have established the fact that primary progressive degeneration of one pyramidal tract occasionally occurs, this is a unilateral lateral sclerosis. They discuss the subject of primary bilateral sclerosis, quoting cases reported by Erb as indicating that primary spastic paralysis exists.

57. **Brain Tumors.**—Starr has collected and analyzed a number of cases operated on for brain tumor, cerebral and cerebellar, making a total of 365, in 11 of which the tumor was not found, and in 27 of which it was not removed. In 59 cases the tumor was removed, but the patient died, while in 168 the patient recovered. The accuracy of diagnosis is greater in recent years, and, he says, given a history of slowly progressing disease, with symptoms of headache, vomiting, vertigo, cerebral discomfort, progressive emaciation and feebleness, and gradual loss of sight due to choked disc, the only possible hypothesis is the existence of brain tumor. The localization of tumor has become more definite and the newer surgical means of access to the brain have rendered operation safer. The invention of the electrical saw is of special advantage in the surgery. It has been shown that it is of great importance in extraction of tumor to have plenty of space, and that large bony flaps can be replaced without danger. It has also been shown that extensive cutting and taking away of parts of the brain is not necessarily attended by danger if hemorrhage is not extensive. For these reasons he thinks the statistics of the next ten years will show a much greater percentage of successes than do the statistics up to date. As regards cerebellar tumors, however, the prognosis is not good. Only one-tenth of the cerebellum can be reached by the surgeon through the occipital fossa, as he has determined by measurements on the cadaver. This region is rarely the seat of cerebellar tumor. It is usually in the middle lobe of the cerebellum, directly beneath the tentorium, or lies in the sulcus between the cerebellum and the pons; both of these are inaccessible localities. He thinks, therefore, that the operation throughout is a futile one. The causes of failure in operations for brain tumor are: 1. Mistakes in the diagnosis. The local symptoms are not infallible. 2. Some tumors when accessible are not removable, such as infiltrating gliomata without boundary. The dangers of hemorrhage and meningitis are less dreaded than formerly, and proper asepsis prevents the latter complication in all cases.

58. **Paramyoclonus Multiplex (Friedreich's Type.)**—Hunt holds that there is considerable confusion in the nomenclature of this condition, which he thinks is generally spinal in its origin. His remarks are:

> 1. The term paramyoclonus multiplex, or myoclonus multiplex, should be reserved for that form of myospasm characterized by multiple, spontaneous, isolated contractions of individual muscles. 2. This type is peculiar and distinctive, and receives its most logical explanation in a disturbance of the spinal centers. 3. It should be carefully separated from the cerebral type of the myospasms, which are characterized by movements of a more or less co-ordinated type, as are observed in the *maladie de tic, tic convulsif* and the convulsive tremor of Pritchard and Hammond. 4. The contractions of paramyoclonus multiplex are closely related to the myokymia and fibrillary contractions. 5. Paramyoclonus multiplex may occur as an idiopathic or a deuteropathic affection, in the latter complicating various organic and functional diseases of cerebral and spinal origin.

Journal of Medical Research, Boston.

June.

59 *Hodgkin's Disease—A Pathological Analysis of Nine Cases. Channing C. Simmons.
60 *Observatons on the Distribution and Culture of the Chancroid Bacillus. Lincoln Davis.
61 *Chronic Cystic Mastitis—A Study of Thirty Cases. Robert R. Greenough and Harry F. Hartwell.
62 *Bacteriology of the Fibrinous Exudate in Septic Peritonitis. Thomas J. Manahan.
63 *Transplantation of Arteries. Joshua C. Hubbard.
64 *The Effect of X-rays on Living Tissue. Seabury W. Allen.
65 On the Increase of Bacteriolytic Complements in the Rabbit's Blood. E. B. Vedder.

59. **Hodgkin's Disease.**—Simmons concludes from his analysis and study of cases that Hodgkin's disease should be regarded as a clinical entity, presenting a definite histologic picture. It has no relations to leukemia or tuberculosis, though the latter may co-exist. Eosinophiles are often, though not always, present in the glands. A considerable portion of his paper is taken up with a report of cases.

60. **Chancroid Bacillus.**—From his investigation Davis concludes that the accumulating evidence of the specific agency of the bacillus of Ducrey in the causation of chancroid justifies the following conclusions:

> 1. The organism is present in the purulent secretions of the great majority of cases of chancroid, and occasionally also in the pus of buboes, and may be identified by its morphology and staining reaction, together with its ability to grow on ordinary culture media. 2. Characteristic growth of the organism in a pure state may be obtained in suitable media from genital chancroids direct and also from chancroidal buboes in some cases. Growth is most luxuriant in a medium of fresh blood and bouillon, but unmixed human blood is the best medium for obtaining cultures from a source open to contamination. 3. Inoculation of a pure culture of the bacillus or of chancroidal pus on the skin of a certain species of monkey reproduces the lesion, from which in turn the original organism may be recovered in culture. 4. The cultivation of the same organism in a pure state from lesions on the hands, clinically resembling chancroid, in the absence of genital lesions, indicates that chancroid may be primary on an extragenital site. 5. Bacteriological examination of all ulcers of this type is likely to establish in the future a greater prevalence of extragenital chancroid than has hitherto been reported.

61. **Chronic Cystic Mastitis.**—From their analysis of 30 cases, Greenough and Hartwell conclude that the name "chronic cystic mastitis" (Koenig) is the best of many terms used to describe the condition of fibroid tissue increase and cystic formation in the breast at the time of the menopause. The term "mastitis" should not imply an inflammatory process due to bacteria, but rather an increase of fibrous tissue of other than local tumor origin. This increase of the fibrous tissue of the breast is normal in the stage of decline of the gland at the climacteric period. The formation of cysts and proliferation of the epithelium of the cysts and acini are striking features of the disease. Variations of the epithelium are found in this disease, from atrophic forms, through columnar cells, to papillary proliferation and cell masses of an adenomatous type. The transition of adenomatous proliferation to carcinoma of the adenocarcinoma type occurs in a few cases, but transition to other forms of cancer has not been observed. This danger is sufficient to make removal of the entire gland desirable in all but the very early and slight degrees of the affection. The operation to be advised is, as a rule, the subcutaneous resection of the entire gland without removal of the nipple. This is best done by means of the Thomas incision under the fold of the breast.

62. **Septic Peritonitis.**—Manahan has investigated the bacteriology of the fibrinous exudate in 19 cases of septic peritonitis. In 17 bacteria were found in the fibrin, pneumococci, streptococci, colon bacilli and *Bacillus aerogenes capsulatus.*

63. **Transplantation of Arteries.**—This is an account of experimental research by Hubbard, dogs being used. He was able in a number of cases to make an anastomosis which would not leak, and which transmitted circulation for the time being, but thrombosis followed in many of the cases. All of the experiments were carried out on the carotids. The same method could be employed on the aorta. In two animals he attempted to transfer branches of the aorta and controlled circulation long enough to perform the operation, though neither of the cases were successful so far as the anastomosis was concerned. He remarks that Matas has published the report of three cases of aneurism cured by suturing the sac, leaving a lumen when possible. This has, therefore, solved part of the problem he applied himself to solve, and by combining Matas' technic with his own, he thinks it might be possible to cure aneurism of the abdominal aorta. The aneurism could be sutured by the method of Matas, preserving its lumen, and any branches which arise from its sac and are too important to obliterate might be transferred to another portion of the aorta.

64. **The X-Rays.**—Allen finds:

> 1. The effect of prolonged *x*-ray exposures on vinegar worms and protozoa is fatal. 2. On superficial capillary circulation the effect is like that of an irritant, producing vaso-dilatation. The relief of pain in cases of deep malignant growths may be explained by this phenomenon. 3. On the heart in cold-blooded animals *x*-rays act as an inhibitor. 4. On growing plants the effect is distinctly stimulating, in fact over-stimulating. On full-grown plants it is not apparently harmful. 5. Exposures

produce immediately a local increase in the number of leucocytes in the blood. This is consistent with the irritant effect upon the skin and capillaries. 6. On surface malignant growths the effect is curative in a great majority of cases, the cure not necessarily being the result of necrosis. 7. On deep malignant growths there is no microscopic change to be found in the pathological or normal cell elements. 8. Excessive exposure on healthy skin produces sloughing of the superficial tissues, leaving a low-grade, sluggish ulceration which heals slowly or not at all. Permanent dilatation of the capillaries and a scarcity of granulation tissue and blood vessels are common in such ulcerations. 9. Clinical effects are not due to *x*-rays so much as they are to some other unknown, but closely allied, phenomenon.

International Medical Magazine, New York.

June.

66 *Questions and Answers Concerning Hyperchlorhydria. Answers by C A. Ewald, Carl von Noorden, Th. Rosenheim, Max Einhorn, J. C. Hemmeter, L. Kuttner, G. W. McCaskey and Boardman Reed.
67 *The Pathology and Etiology of Gastric Hypersecretion. George Hayem.
68 On the Treatment of Primary Hyperchlorhydria by the Direct Application of Electric Currents of High Frequency to the Mucous Membrane of the Gastrointestinal Tract. George Herschell.
69 *An Experimental and Clinical Study of the Etiology of Hyperchlorhydria. John C. Hemmeter.
70 *The Treatment of Hyperchlorhydria. Fenton B. Turck.
71 The Medicinal Treatment of Hyperchlorhydria. Allen A. Jones.
72 The Relations Between Hyperchlorhydria and Neurasthenia. John A. Lichty.
73 The Effervescence Test for Gastric Acidity. A. L. Benedict.
74 A Further Development of the Benedict Effervescence Test for Gastric Acidity. Boardman Reed.
75 The Etiology of Hyperacidity. A. Robin.

66. **Hyperchlorhydria.**—This issue contains a symposium on hyperchlorhydria. A number of queries were submitted to various distinguished authorities, and their answers are given. The frequency of the condition seems to be variously estimated. Ewald, Küttner and McCaskey consider it by no means the most frequent of gastric disorders, while, on the other hand, Einhorn and Reed seem to think it outnumbers all other derangements. Von Noorden and Hemmeter are guarded in their answers in regard to the matter. The relation of hyperchlorhydria to gastric ulcer is also a point on which the authors differ, some holding that gastric ulcer causes hyperchlorhydria and others that it is a direct effect of it. As regards treatment, there are also differences of opinion, some believing in the free use of carbohydrates and fats and the withholding of meats, while others still allow the latter. The alkaline drug treatment seems to be the one in favor.

67. **Gastric Hypersecretion.**—Hayem finds the cause of hypersecretion to be the various forms of parenchymatous gastritis. It is probable that some of the vices of alimentary hygiene, which are the habitual causes of gastritis, act in a special manner on the glandular element, but it would be difficult to indicate them at the present time. An excess of food, especially nitrogenous, fermented beverages, and in women the compression of the waist by the corset, are the most frequent causes noted by him. The influence of heredity seems to be also incontestable.

69. **Hyperchlorhydria.**—Hemmeter recognizes two classes of this infection: 1. Those of a neurotic type in which there is a preponderance of nervous symptoms and fragments of the mucosa show no increase in the number of gland tubules or in the oxyntic or acid cells. 2. Those where there is an increase in the number of gland tubules or in the oxyntic cells. There is no sharp line between these two, but they require somewhat different treatment. In some cases the hyperacidity may be kept up by a proteid diet, though the latter may relieve the annoying symptoms for a time. If this relief is very brief, however, and the indican increases, then he advises a diet rich in carbohydrates and fats. All cases of hyperacidity require a certain amount of carbohydrates. In case of ulcer the diet must be as little irritating as possible.

70. **Treatment of Hyperchlorhydria.**—Turck goes at length into the mechanism of the symptoms and advises the use of demulcents as imitating Nature's method in throwing out mucus on the irritated stomach. To prevent the irritating action of water directly on the mucous membrane he has long advised the use of an intragastric bag, which will give the beneficial effects of heat in water without causing irritation. Water vapor, on the other hand, has a soothing effect, and is improved by the addition of volatile antiseptics, a few drops of oil of cloves, menthol, cinnamon, etc., added to half a gallon of water. He finds that these oils lessen the flow of hydrochloric acid rather than increase it. He describes the methods of forced feeding or gavage and the class of cases in which it is indicated, especially those in which the appetite fails, and there is repugnance to food, loss of weight, and where it is found desirable to so arrange the food as to coat the stomach with a bland substance, giving it in a mucilage of slippery elm, etc. One of the chief advantages of this is that the psychic gastric juice secretion is prevented, the odor of food and its taste being absent. In the severe forms, rest to the stomach is important in the initial treatment; putting the patient to bed and withholding all food for forty-eight hours, following this by one meal a day by gavage. The medication consists in the alkalies for neutralizing the acid and atropin to lessen secretion. In conclusion he mentions the Carlsbad mineral water and the French Lick spring water, which should be taken in small quantities, and the value of psychic treatment, gymnastic exercise and outdoor life.

Clinical Review, Chicago.

July.

76 *Gastric Ulcer; Its Diagnosis and Indications for Surgical Intervention. A. F. Stewart.
77 Lectures on Gynecology. Franklin H. Martin.
78 Pathogenesis of Locomotor Ataxia. (Continued.) G. B. Hassin.

76. **Gastric Ulcer.**—Stewart thinks that gastric ulcer is more frequent than supposed, and that if we rely on the so-called classical symptoms, we will miss an early diagnosis in about 60 per cent. of cases. It may be reasonably held that a patient suffering from trouble in the right upper quadrant of the abdomen, unrelieved by medical treatment or suitable diet, probably has gastric ulcer or cholecystitis or both. Any medical treatment in which the hemoglobin fails to approximate the normal will fail, and surgical intervention is contraindicated with a low hemoglobin percentage and a high leucocytosis. The mechanical irritation of food in ulceration is a strong factor in the subsequent development of carcinoma; hence, gastro-enterostomy should be instituted early to secure the physiologic rest necessary to repair.

Maryland Medical Journal, Baltimore.

July.

79 *Effects of the Streptococcus on the Cortical Nerve Cell in Meningitis. Leonard K. Hirshberg.
80 *Is Cesarean Section Advisable in the Treatment of Placenta Previa? Henry D. Fry.

79. **Meningitis.**—Hirshberg has investigated and reports a case of meningitis with complete postmortem details and examination of the cortical brain cells. The infection in this case was clearly a streptococcic one, the organism being found by lumbar puncture during life and in cultures from the surfaces of the brain and spinal fluid after death. Sections taken from the cortex in the rolandic area, where the green purulent exudate was very thick, stained by Nissl's modified method, showed interesting changes. All of the Nissl (or tigroid bodies had entirely disappeared from the cell bodies, and many of the cells had lost their nuclei and took the stain poorly. The cells were shrunken, distorted and irregular where the nucleus remained, and it was swollen, vesicular, and its limiting membrane at times in contact with the body wall of the cell. The nucleus as well as the nucleolus was displaced in many cases. The changes were not exactly the same as those which Barker found in his case of epidemic cerebrospinal meningitis. The nuclei were more swollen and disorganization of the stainable substance of Nissl was more complete. This may be either a question of degree of intoxication, the author says, or it may show a distinct action of the streptococcic toxin. Though there may have been some effects from reaction at a distance, direct or immediate action of the toxins of the streptococcus is the most probable.

80. **Cesarean Section.**—Fry discusses the question as to the advisability of cesarean section in placenta previa, and concludes that it is advisable in a small proportion of cases when the woman is in good condition and has not been exhausted by prolonged labor or hemorrhage, and when the placenta is implanted centrally, or nearly so, and when the cervix is un-

that the principal factor. Experiments on animals show that generally fatty degeneration is the result of chloroform narcosis, but it is more difficult to suppose that this might be followed by death from anesthesia of only an hour or so. From the facts presented, he thinks it is probable that the liver being in an advanced state of fattiness previous to operation, was probably on the verge of functional inadequacy with regard to elimination of toxins entering the portal circulation, though still able to hold its own in ordinary circumstances. Chloroform aggravated the condition and lowered the hepatic function so that ptomains or toxins escaped into the general circulation, or by their specific action on the kidneys prevented the elimination of such poison. These are the conclusions of his former paper. He remarks on the possibility of foreseeing whether chloroform will be dangerous in a given case, and refers to Poehl's statement that the quantity of alkaline substance may be a guide. Whether this has been proven to be a face he does not know, but there are practical difficulties in the thorough examination of the urine to the extent required. He also suggests a possibility of danger in the practice of utilizing phloridzin before operations to test the adequacy of the kidneys. It has, according to Romfeld, the effect of causing a storage of fat in the liver. The diagnosis of these cases is not difficult when we consider the cerebral symptoms and delirium which is noted. Jaundice was only present in one case. The treatment which he would recommend would be the use of stimulants, active purgation, venesection and saline transfusion. There is no use to wait until the chold is comatose before resorting to these measures.

15. **Diet in Pregnancy.**—Paton has investigated the effect of diet on the weight of the newborn, and finds that observations, though not numerous, agree so closely that they warrant the conclusion that the size of the offspring depends very directly on the diet and nutrition of the mother during pregnancy. While this explains the easy labors among the healthy lower classes and confirms Prochownick's conclusion that by dieting the mother the children of rickety women may be so reduced in size as to be viable, it also helps to explain the very high infant mortality among the very poor. The physiologic point of chief interest seems to be the demonstration of the limitations in the extent to which the tissues of the mother can be utilized for the construction of the embryo. The nutrition of the maternal tissues seems to take precedence over the nutrition of the fetus. If this were not the case, we would find that badly nourished mothers produce a greater proportion of weight than well-nourished mothers, which is the reverse of what occurs. The mother thus appears to pass on the surplus nourishment to the fetus and the better the nourishment of the maternal tissues the greater the growth of the young *in utero*.

17. **The Ortol Reaction.**—Douglas calls attention to the color reaction recently described by Saul in the *British Medical Journal*, which he has employed in a number of cases. It is simply the adding of a few drops of a 1 per cent. solution of an organic compound, orthomethyl-aminophenyl-sulphate to raw milk or milk which has not been raised above a certain temperature and following it by a drop of weak peroxid and hydrogen (5 volume strength), which produces in a very short time a deep reddish-pink color. When this is carried out on milk that has been heated above the pasteurization point (above 75. C) or a little higher, this reaction fails, or only a slight brownish tinge is given. As the compound is expensive, Saul advises the use of ortol instead, a substance used in photography, and consisting of the above body mixed with quinol. Douglas has always employed it, and for the sake of convenience calls the test the ortol reaction.

Indian Medical Gazette, Calcutta.

June.

18 *Vesical Calculus. W. K. Hatch.
19 Some Septic Infections and Nervous Lesions Following Chancroids. E. F. Gordon Tucker.
20 Note on the Climate of Erythrea. G. M. Giles.
21 Note on the Mycoid Body Found in the Blood Corpuscles in Remittent Fevers. (Continued.) W. Leonard Braddon.

18. **Vesical Calculus.**—Hatch has had considerable experience with stone in the bladder in Bombay, and gives his views. As regards lateral lithotomy he thinks there are very few occasions in which it can be used in adults with advantage. The possibilities of causing urine incontinence and also of opening the peritoneum are decidedly against it. As regards litholapaxy in the ordinary uncomplicated cases in adults it is almost an ideal operation, and he thinks the perineal method has not been sufficiently valued and utilized. The operation requires skill on the part of the operator, and especially in children where the tissues tear easily and the parts are small. The anesthetizing is an important matter in these cases, and it is impossible to seize and crush the fragments unless the bladder walls are passive, and sometimes the use of instruments sets up a movement which may hamper, if not destroy, the possibility of further progress. Without a skillful anesthetist he would hesitate to operate by crushing. Suprapubic lithotomy he thinks undesirable in adults, excepting in a case of very large stone. It is slow in healing, and the accumulation of phosphates, etc., causes an irritation, and the patient sometimes dies from exhaustion. In any case he thinks it is well to drain through the perineal urethra. It does not increase the risk, and only takes a few minutes. In children, however, the operation is a good one. The bladder is naturally high, is easily raised above the pubis, readily opened without danger to the peritoneum, its contents can be easily removed, and subsequent suturing carried out with facility. For men engaged in general practice, as opposed to hospital practice, the operation is much safer than litholapaxy in children. Cystitis is also less likely to occur in children. Cutting is, therefore, more cleanly and the incision heals better. With small stones and roomy passages, it is often possible to remove the calculus by a good-sized evacuating canula. He has several times succeeded by this method. He does not find many cases of encysted stone, indeed has had but one case where it was unreachable by the lithotrite. In this case the suprapubic operation was required. The mortality of the suprapubic operation in his cases was about 32 per cent.; in his perineal lithotomies about 10 per cent.; of 352 litholapaxies only 16 died, or 4.5 per cent. His tabulation does not include a series of two hundred or more cases where sufficient data were lacking for publication, but the results of these two hundred averaged rather more favorably than those reported. The patients were of a better class, mostly from outside the city, and in better physical condition.

Intercolonial Medical Journal of Australasia, Melbourne.

May 20.

22 Observations on Pathology and Surgery of Retrodisplacements of the Uterus. (Continued.) G. Rothwell Adam.

Annales d. Mal. d. Org. Genito-Urinaires, Paris.

Last indexed XL, page 408.

23 (XXI, 1.) *Recherches expérimentelles sur la tuberculose génito-urinaire, surtout sur la tuberculose des reins (*of the kidneys*). P. N. Hansen (Copenhagen).
24 De la valeur de l'electrolyse linéaire dans le traitement des rétrécissements de l'urèthre (urethral strictures). Moran.
25 (No. 2.) Revue critique sur les lois de la formation des sexes. F. P. Guiard.
26 **Des perfectionnements récents apportés au diviseur vésical gradué.* F. Cathelin.
27 (No. 3.) Entérite et bactériurie. J. Janet.
28 3 cas de traumatisme du rein (*of kidney*). *P. Guibal.*
29 (No. 4.) Du rétrécissement (stricture) blénnorragique de la *portion membraneuse de l'urèthre. P. Bazy and Decloux.*
30 *Urine Segregation in Children. G. Luys.—La séparation de l'urine des 2 reins chez l'enfant.
31 (No. 5.) *De l'influence de la résection du vas déférent sur le tonus du sphincter vésical. A. Wassilieff (Warsaw).
32 *Double Bladder. F. Cathelin and Ch. Sempe—La vessie *double.*
33 Illumination for Urethroscopy. Bensa.—De l'éclairage dans *l'uréthroscopie.*
34 (No. 6.) **Du traitement des rétrécissements de l'urèthre par* l'electrolyse linéaire. F. André (Nancy). See above in No. 1.
35 Traitement des uréthrites chroniques. B. Motz.
36 *Déformations de l'urèthre dans l'hypertrophie de la prostate. Nouvel sonde pour le cathéterisme des prostatiques. J. M. Bartrina (Barcelona).
37 *Ablation of Suppurating Inguinal Glands. A. Pousson (Bordeaux).—Sur l'extirpation des adénites vénériennes suppurées de l'aine.
38 (Nos. 7-8.) *Modifications du technique des injections epidurales. F. Cathelin.
39 *Contribution à l'anatomie pathologique de la tubercuose de l'appareil urinaire. N. Hallé and B. Motz. (Commenced in December, 1902.)
40 (No. 9.) *Du cancer primitif et limité de la prostate et de son *traitement par la prostatectomie périneale.* Oralson (Bordeaux).

41 (No 10.) *Massage in Treatment of Strictures of Urethra. J. M. Bartrina (Barcelona).—Traitement des rétrecissements de l'urèthre par le massage.
42 (No. 11.) Role de la prostate dans les tumeurs epithéliales infiltrées de la vessie (of bladder). E. Monfort.

23. **Experimental Tuberculosis of Genito-Urinary Organs.**—Hansen found it impossible to induce hematogenic tuberculosis of the bladder in his experiments on rabbits, even after contusion of the organ and simultaneous subcutaneous injection of tubercle bacilli. But direct inoculation proved successful, especially when accompanied by transient retention of urine. The resulting lesion was generally insignificant and displayed no tendency to spread by way of the ureters to the kidney, but it almost invariably involved the prostatic vesicle and the prostate itself. Inoculations in the lower portion of the vas deferens induced tuberculous lesions, not only in the testicle and epididymis, but also in the vas and prostatic vesicle. In one instance the prostate was likewise invaded, but never the bladder, and still less the ureters or kidneys. In one single case injection into the ureter, plus ligature, was successful in inducing a tuberculous lesion in the kidney.

26 and 30. **Intravesical Segregation of Urine.**—The instruments devised by Luys and Cathelin have been described in The Journal from time to time during the past year. Luys has found a small size useful for children. See The Journal, xl, p. 62, ¶39.

31. **Influence of Resection of Vas Deferens on Vesical Sphincter.**—Wassilieff ascribes to reflex action on the tonus of the bladder sphincter the favorable results observed after resection of the vas deferens in case of hypertrophy of the prostate. He has been led to this conclusion by the constant results in a series of experiments on dogs. This explains the promptness with which the result is attained, sometimes in a few hours. The suppression of the spasmodic contraction of the sphincter affords better conditions for drainage of the bladder thereafter, and this ensures continuous and prolonged benefit. The most brilliant successes in these sexual operations have been obtained in cases of acute retention. Pankreatieff reported in 1900 that only 3 failures had been observed in 39 cases belonging to this category. In the experimental research described the degree of intravesical pressure necessary to emit the urine was determined before and after the intervention, and in every instance resection of the vas reduced the tonicity of the sphincter.

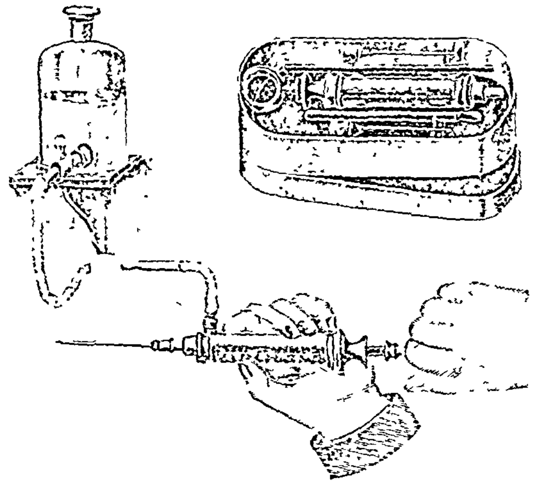
32. **Double Bladder**.—Cathelin gives the details of 17 doubtful but probable cases of double bladder that he found in the literature, and of 15 certain cases, including one personally observed. In the latter a man of 82 died in urinary cachexia from complete retention. Two bladders were found, both about the same size and located one behind the other. The right ureter opened into the anterior and the left into the posterior organ.

34. **Linear Electrolysis for Urethral Stricture.**—André concludes from study of 23 cases that this method of treating a stricture may be indicated when it is not multiple or not more than three; when the stricture is not too hard, and especially when it is merely a narrow belt and the urethra is not constricted for any distance. Under these conditions electrolysis is to be preferred to urethrotomy on account of the simplicity of the intervention and the lack of necessity for after-care. But it is very important that the dilation realized should be maintained by occasionally passing a bougie, as after any method of treating stricture. Neglect of this precaution may undo all the benefits derived, as he has learned from his experience.

36. **Flat Catheter for Hypertrophied Prostate.**—Bartrina has found that the hypertrophied prostate frequently nearly closes up the orifice into the bladder, but leaves a long, narrow slit. In these conditions he has found that a catheter made flat instead of round could be readily passed through the slit, when it was impossible to introduce ordinary round catheters even of a much smaller size.

37. **Ablation of Suppurating Buboes.**—Pousson treats suppurating venereal inguinal adenites the same as a malignant neoplasm. He removes the entire infected pleiad of ganglia with the gland involved. His patients were dismissed cured in fifteen to twenty days, and he is convinced that better results follow this method of treatment.

38. **Improved Technic of Epidural Injections.**—A. Strauss of Barmen has introduced Cathelin's epidural injections into Germany, modifying the technic somewhat. He is preparing an address on the subject for the approaching Naturforscher Congress in Germany, and in the meantime has published a work on the subject extolling the method as important progress. Cathelin and Strauss both claim that this method of spinal cocainization is free from the dangers of the subarachnoid route as also from its inconveniences, while it is at least fully as effective. (Cathelin's technic was described in The Journal, xxxviii, 1902, p. 1279, ¶60.) Strauss announces that the lowest limit of efficacy of the cocain solution, .02 per cent., can be reduced by one-half if it is dissolved in physiologic salt solution. His formula is: .2 sodium chlorid; .01 cocain hydrochlorate in 100 gm. distilled water, with the addition of 2 drops of 5 per cent. carbonated water. He has invented a syringe which fills itself automatically and is peculiarly adapted for this work, and also for infiltration anesthesia as it has a double valve arrangement allowing both aspiration and expulsion.



He uses a platinum needle about 6 cm. long and 1 mm. in diameter, kept very sharp. Cathelin gives illustrations showing the various points in the technic.

39. **Tuberculosis of the Urinary Apparatus.**—In the second part of this important contribution and review of the vast material at the Necker Hospital, tuberculosis of the posterior urethra, prostate and seminal vesicles is considered, with 44 cuts. Rectal exploration is the only effectual mode of investigating the condition of the prostate. Increase in size and tension reveal the perituberculous congestion. The finger sinks in, the tumefied organ feeling like a uniform, pasty mass. In the atrophic, sclerous form, frequently one phase of healing, the organ will be found diminished in size and indurated. Palpation of the vesicles reveals the same pasty consistency. Expression of the prostatic juice by massage through the rectum is liable to reveal the Koch bacillus. A subvesical cavity is suggested when the forcible evacuation of urine is followed by a dribbling from the pocket below the bladder. Hemorrhage may also occur from the pocket, as hemoptysis from a cavity in the lung. The pocket may be palpated through the rectum and its contents evacuated. The feeling through the rectum of a catheter in the cavity is also characteristic. The prognosis of tuberculosis in the posterior urethra is grave, but tubercles in the prostate and seminal vesicles are liable to heal. A perituberculous reaction on the part of the connective tissue may arrest and cure the tuberculous focus, and the possibility of this contingency should always be borne in mind. Secondary infection is liable to prove disastrous and catheterization should therefore be restricted to the minimum. The possibility that the tuberculous focus is single is slight. Saxtorph found only 9 cases of an isolated focus in the prostate and 2 in the vesicles in 205 cases of chronic urogenital tuberculosis. On the

other hand, the pathologic anatomists find a marked tendency to encystment of the lesions. At the Necker Hospital many cases of actual spontaneous cures by this process of sclerosis have been encountered, and the clinic confirms the possibility of spontaneous cure of tuberculosis of the testicles, prostate and vesicles. The surgeon should, therefore, refrain from precipitate intervention. Vigorous medical, hygienic and medicinal measures should be instituted, refraining from all instrumental or topical treatment. If the affection continues a progressive course, threatening softening and suppuration, the surgeon should proceed to forestall the pathologic destruction of the organs by suppressing the focus. The prostate and vesicles should be removed if the lesions in them are extensive and softening has already occurred, liable by their further progress to endanger life. The results will be good, barring complications elsewhere. Even in an advanced stage, regardless of the general condition, surgical intervention may sometimes be useful. By evacuating a large subvesical cavity through the perineum, draining and diverting the course of the urine to obviate stagnation and its general effects, the surgeon will frequently relieve and may sometimes cure.

40. **Cancer of the Prostate.**—Oraison has observed 2 cases of primary cancer of the prostate. Twenty-eight cases have been encountered at the Necker Hospital in the course of three years in a total of 306 prostatic subjects, and 16 at Saint-André in twelve years, in a total of 170. Albarran and Hallé found 14 epitheliomata of the prostate in 100 cadavers which had been labeled as merely hypertrophy of the organ. They were the first to describe the circumscribed variety, adenoid epithelioma. Neoplasms in the prostate are usually observed under 10 or over 50 years of age. In young subjects sarcomata of the prostate are more frequent and epitheliomata in the elderly. The above writers have published 10 cases in which simple hypertrophy of the prostate became transformed into a malignant neoplasm. Socin, Klebs and Thompson have met with 3 more. Different varieties of cancer have been found in the prostate, carcinoma 48, and sarcoma 7 in 55. In 10 cases on record operated on more than four years ago, the cure has persisted to date. In 6 cases there was an operative cure, and in 4 the patients died during or soon after surgical intervention. In 3 others recurrence followed in nine to fourteen months. The conclusions imposed by experience and review of the literature are that every suspicious case of hypertrophy of the prostate causing symptoms sufficiently annoying to justify intervention, should be treated by prostatectomy, according to Albarran, and very frequently the lesion will prove to have a tendency to malignancy. Even when a cure is not possible, an operation may afford great relief. Subtotal prostatectomy will usually answer unless the prostatic urethra be likewise involved. When the cancer has passed beyond the limits of the gland abstention is the wisest course.

41. **Massage in Treatment of Urethral Strictures.**—Bartrina first fills the bladder with a 1 per 2,000 solution of mercury oxycyanid and then dilates the strictures with two or three catheters, as usual, at each sitting, massaging the urethra for five minutes over each catheter in turn. These procedures summon the leucocytes to the spot, but in order to reach it they have to pass the zone of the stricture sclerosis. In order to cross this zone the leucocytes have to make a way for themselves through the interstices of the fibrous tissue. By this microscopic burrowing through the tissue its trabeculæ become less compact, the meshes are stretched and the tissue becomes more flexible. The leucocytes also bring away with them the infiltrates in the glands and sweep them clean as it were. Massage is therefore indicated to promote absorption, and as a preventive measure in case of infiltration to prevent its becoming organized into sclerous tissue. It is especially effective in the treatment of chronic urethritis, which so often accompanies a stricture, but its chief value lies in its modification of the stricture itself.

Revue mens. d. Mal. de l'Enfance, Paris.

Last indexed XL, page 1762.

43 (XXI, June.) *Les paralysies précoces du voile du palais dans la diphthérie et leur pathogénie. Deguy.
44 *Dilatation aortique rheumatismale. Zuber.
45 *Propriétés du sérum antidiphthérique. L. Martin.

43. **Early Paralysis of Soft Palate in Diphtheria.**—Deguy suggests that there is a secondary infectious factor in these paralyses as well as a toxic. Five cases which he reports confirm this assumption.

44. **Dilation of Aorta from Rheumatism.**—Zuber has had occasion to observe two cases of this condition, and has traced one for three years. The lad is now 16 and has had seven attacks of acute articular rheumatism. The aortitis has continued a progressive course and the aorta is now enormously dilated.

45. **Antidiphtheria Serum Tablets.**—In this communication from the Paris Pasteur Institute Martin states that he has established that the curative serums contain a sensibilizing substance when they are able to induce agglutination, which ordinary serums do not have. He also announces that antidiphtheria serum applied locally to the throat in case of diphtheria rapidly reduced the pain in all his experiences. Local applications are too transient for much benefit to be derived in this way and still better results are attained by incorporating dried serum with some vehicle which slowly dissolves in the mouth. Tests of serum tablets thus made and given to adults and older children, showed that the pain rapidly subsided under their influence, the membranes turned yellow, swelled, and were soon cast off. Cultures taken from the throats after using these tablets showed that a much smaller number of colonies developed after twenty-four hours than in control cultures, and very few could be discovered after forty-eight hours. His experience demonstrates that the persistence of the diphtheria bacilli in the throat can be diminished by using these tablets, and that they will also serve as a prophylactic measure. He never failed to make the usual subcutaneous injections of the serum in cases of established diphtheria, and regards the tablets in such conditions as merely an adjuvant until further orders.

Beitraege z. Klin. Chirurgie (von Bruns'), Tuebingen.

Last indexed page 218.

46 (XXXVI, 1.) Sarkome und Endotheliome nach ihren path.-anat. und klinischen Verhalten. L. Burkhardt.
47 Ueber die Dupuytren'sche Finger-Kontraktur. G. Doberauer.
48 *Ueber Adenome des Dünn- und Dickdarmes (of intestines). F. Smoler (Prague).
49 *Die Behandlung der Spina ventosa mittelst freier Autoplastik. C. Timanu (Rostock).
50 *Ueber das mal perforant des Fusses. O. v. Wartburg (Zurich).
51 *Zur Chirurgie der Milz- und Leberverletzungen (spleen and liver injuries). H. Roeser (Carlsruhe).
52 Intracranial Affections in Case of Empyema of the Sphenoidal Sinus. Kander.
53 (No. 2.) *Zur Diagnostik und Therapie des inneren Darmverschlusses (internal intestinal obstruction). E Hepner.
54 *Exp. Beitrag zur Kenntnis der infektiösen Thrombose. L. Talke (Konigsberg).
55 *Articular Affections in Syringomyelia. Michel (Tübingen).—Zur Kenntnis der Gelenkerkrankungen bei Syringomyelie.
56 Ueber Volvulus der Flexura sigmoidea. F. Kuhn (Konigsberg).
57 *Zur Lokalisation der inneren Darm Okklusionen und zur Frage der Autointoxikation. C. Borszeky and A. v. Genersich (Budapest).
58 *Ein neues Massage-Verfahren. F. [illegible]
59 *Prospects of Operative Treatment o[illegible] [illegible] Glands are Enla[illegible] [illegible]ussichten biete[illegible]
60 ([illegible] of Varices [illegible] Shelling-out Method. F. Fraenkel (Nuremberg).—Ueber die Behandlung der Varicen der unteren Extremität durch Ausschälung nach Madelung
61 *Krause Skin Flaps H. Widmann.—Ueber Transplantation ungestielter Hautlappen nach Krause.
62 Transferring the Nerve Groove in Soft Parts in Treatment of Radial Paralysis After Fracture of Arm. G. Reisinger. [illegible] Radialislähm[illegible] Results.
63 *Zu[illegible] f[illegible] Patellar-Frakturen. [illegible]
64 *Ueber die Aberration von Prostata-Drüsen und ihre Beziehung zu den Fibroadenomen der Blase. Ch. Thorel.
65 Fall von Eierstocksschwangerschaft (ovarian pregnancy). R. Bandel.
66 Congenital Tumors of Sacro-Coccygeal Region. J. Wieting (Hamburg).—Beitrag zur den angeb. Geschwülsten der Kreuz-Steissbeingegend
67 Ue[illegible] Geschwülste und Strumen unter bes. Topographie und der Technik der [illegible]
68 Die transpleurale Laparotomie und die offenen Milzwunden (open spleen injuries). F. Schaefer.

48. **Adenomata of Intestines.**—Smoler's experience includes 8 cases of polypi in the rectum observed at the Prague clinic,

and he reviews 12 in the literature. He also describes a typical case of adenoma in the small intestine, with 5 collected, and 15 cases of adenomata in the large intestine. On this basis he describes the clinical picture, prognosis and treatment.

49. **Autoplastic Treatment of Spina Ventosa.**—Tilmann advocates Müller's method of substituting the diaphysis of the metacarpus by a fragment of bone taken from the ulna with its periosteum. One of the advantages of this method is that both wounds are near enough together to be dressed with the same bandage. He has thus treated 13 cases, and remarks that this method can be considered comparatively certain and the resulting function good, although induration or a fistula may persist in some cases for a time. He emphasizes the necessity of taking a larger piece of bone for the substitute flap the younger the subject.

50. **Mal Perforans.**—In 6 of the 14 cases reported from the Zurich clinic no causal factor could be determined, but in the others there was evident degeneration of the nerve or vascular sclerosis.

51. **Surgery of Injuries of Spleen and Liver.**—Roeser is able to report 2 severe cases of rupture of the spleen and hemorrhage into the abdominal cavity which were cured by an abdominal splenectomy. In the third case, a stab wound was merely tamponed, and the patient succumbed to metastatic pneumonia. He also describes 5 cases of injury of the liver treated by surgical intervention.

53. **Treatment of Internal Intestinal Obstruction.**—Hepner reviews the published statistics of certain German clinics in addition to Riegner's at Breslau, and concludes that the best results are obtained when attention is paid chiefly to improving the conditions of the circulation and relieving the overfilled intestine. In Riegner's experience with 37 cases, operative intervention was required in 31, and 15 of these recovered. The palpation findings were positive in 17 of the 31, in 12 negative and in 2 misleading. He thinks the indication to relieve the distended intestine is as urgent as to make a correct diagnosis by palpation beforehand. Hepner describes the cases in detail.

54. **Experimental Infectious Thrombosis.**—Talke found that thrombosis occurred in 33 experiments out of 44, in which he inoculated rabbits, cats or dogs with staphylococci in the vicinity of a vein or artery. In 16 cases the thrombi completely obliterated the vessel, and in 12 only partially closed the lumen. Thrombosis was noted as early as nine hours after the inoculation. He describes the histologic findings; they suggest that the thrombosis occurred indirectly, by the intermediation of inflammatory alterations.

55. **Changes in Joints in Syringomyelia.**—In 17 cases of syringomyelia observed at von Bruns' clinic, the joints were affected, the shoulder in 12, elbow in 4, wrist, hip, knee or ankle in one each. This represents 30 per cent. of the total number of cases of syringomyelia observed during the last forty years at the clinic. Men were affected more frequently than women, and trauma seemed to be an important factor. The joint affection is slow and chronic, and in only 2 cases was operative intervention required. Sokoloff noted joint troubles in 10 per cent., and Schlesinger in 25 per cent., in their experience with syringomyelia.

57. **Autointoxication in Case of Intestinal Occlusion.**—The experimental researches reported apparently demonstrate that the passage of the bacterium coli into the blood and tissues, in case of intestinal occlusion, is the cause of the general symptoms observed. Indicanuria was noted in 85.7 per cent. of the cases after occlusion of the small intestine; in 19 per cent. after occlusion of the large intestine, and in 20 per cent. after occlusion of the cecum The bacterium coli was found very early in the blood and in the abdominal cavity in a large proportion of the experiments.

58. **Mercury Massage for Fingers and Hands.**—Hofmeister describes a gentle means of massaging the hand in use at von Bruns' clinic. The patient is seated and dips the finger or hand gradually into an iron cylinder about 12 to 15 cm. in diameter and 50 cm. high, half full of quicksilver. A layer of 30 per cent. alcohol on top, a few centimeters thick, prevents evaporation or loss of the metal by its sticking to the hand or arm. Any wound on the fingers is protected by an adhesive plaster. The single sittings are from a quarter to an hour long, and the absolute painlessness, the regularity and the gradual way in which the hand can be immersed in the quicksilver at rhythmic intervals, commend this new massage procedure for general adoption. The only drawback is the expense of the quicksilver.

59. **Prospects of Operative Treatment of Mammary Cancer.**—Küttner reports from the same clinic that not a single one has survived to date out of the 41 cases of mammary cancer, operated on between 1880 and 1892, in which the supraclavicular glands were enlarged. All the apparently morbid elements were removed at the intervention. He reviews the details of 54 cases in which the supraclavicular glands were thus removed with the cancer.

60. **Treatment of Varices by the Madelung Method.**—Fraenkel states that extremely favorable remote results were obtained in 16 out of 21 cases of severe varices on the leg treated by shelling out the varicose veins. In 3 no appreciable benefit was derived, and 2 were merely improved. This operation has been performed at the Nuremberg clinic in 9 other cases also, of more recent date, a total of 35 operations on 30 patients, 7 of whom were women. Healing proceeded smoothly in all but 3 cases, in which there was moderate necrosis of the skin. This method of operating is reserved for the severer cases, in which operative intervention is indicated by the recurring neuralgic pains, cramps in the calves, swelling, hemorrhage or danger of it, obstinate eczema or ulcers. Such cases may call for the most radical ablation of the morbid venous network with excision of the saphena magna up into the thigh nearly to the fossa ovalis. Only in case such an extensive operation is absolutely contraindicated by the danger of the narcosis or other reason, is the Trendelenburg method preferable, that is, resection of a portion of the vein about 10 cm. long, just below its mouth. The technic of both methods of surgical intervention is described in detail. For the first, after a day or so of preparation the leg is wrapped in a sterile cloth and allowed to depend over the side of the bed for a few minutes, after which elastic constriction is applied at the root of the member, and under general narcosis the incision, starting at the fossa ovalis, exposes the saphena, which is resected between two ligatures. The peripheral threads are not cut but serve to locate the vein. The shelling out is more difficult below the knee, and several incisions may be necessary to avoid too much undermining of the skin. He uses fine silk to ligate the lumina and closes the long incision without drainage. The leg is placed in side splints and raised as high as 60 cm. for a week and then gradually lowered.

61. **Krause Flaps.**—The chief point in transplanting unpedunculated flaps is to keep them in place with catgut sutures. Widman describes 29 cases. In 11 the flap was applied on a finger after amputation, in 4 after removal of a tumor, in 5 after excision on account of lupus, disfiguring scars or traumatic defects.

63. **Treatment of Recent Fracture of the Patella.**—This article, with the 7 others preceding or following, issues from the Nuremberg clinic. In operative intervention in 5 cases of fractured patella the parts healed smoothly and the functional results are most excellent. Contact with the fingers in operating is scrupulously avoided, the joint cleaned with saline solution and fixation accomplished by an electric drill and silver wire. The wound is closed without drainage. Thienger lays great stress on the after-treatment, massage, suspension, etc. The patients are allowed to get up the fourth week, still wearing an immobilizing apparatus.

64. **Aberrant Tissue from Prostate.**—Thorel describes some very small tumors found by chance between the mouths of the ureters in the bladder at 4 autopsies of men between 20 and 59. Histologic investigation disclosed a structure similar to that of the prostate, and he thinks that certain cases of adenomatous neoformations in the bladder may be due to aberrant elements from the prostate.

Centralblatt f. Bakt. u. Inf. Krankh., Jena.

Last indexed page 66.

69 (XXXIII, 4.) Zur Frage der Pathogeneität des Bacillus subtilis, bes für das Auge (especially for the eye). B. Kayser (Freiburg).
70 Plague Bacilli in the Blood. W. J. Calvert (St. Louis).
71 *Protection of Accessory Cavities Against Bacterial Invasion by Ciliary Movements. F. Törne (Lund).—Das Vorkommen von Bakterien und die Flimmerbewegung in den Nebenhöhlen der Nase.
72 Variations in Virulence of Different Cultures of Tubercle Bacilli. D. Veszpremi.—Virulenzunterschiede verschiedener Tub.-Bacillenkulturen.
73 Zur Kenntnis der Ratten-Pest. T. Skschivan (Odessa).
74 Ueber ein für Haus-Ratten pathogenes Bakterium. C. Toyama (Tokyo).
75 Forest Mosquitoes and Forest Malaria. A. Lutz (Sao Paulo, Brazil).—Waldmosquitos und Waldmalaria.
76 Some Observations on the Protective Bodies and on Their Relation to Bacterial Virulence. E. W. Ainley Walker (London).
77 Die Züchtung von Gonokokken auf "Thalmann-Agar." S. H. Brongersma and T. H. Van de Velde.
78 *New Stain for Flagella. E. Gemelli (Milan). Eine neue Färbemethode der Bakteriengeisseln.
79 (No. 5.) Contribution à l'étude des caractères morphologiques et des cultures du Bacterium pestis et des rapports de ce bacille avec Bacterium pseudotuberculosus rodentium. B. Galli-Valerio (Lausanne).
80 Immigration of Ankylostomum Through the Skin. A. Looss (Cairo).—Weiteres über die Einwanderung der Ankylostomen von der Haut aus.
81 Immunity to Anthrax. O. Bail (Prague).—Untersuchungen über natürliche und künstliche Milzbrandimmunität.
82 A Study of Immunization Hemolysins, Agglutinins, Precipitins and Coagulins in Cold-blooded Animals. H. Noguchi (Woods Holl, Mass.).
83 The Interaction of the Blood of Cold-blooded Animals with Reference to Hemolysis, Agglutination and Precipitation. Ibid.
84 Properties of Serums. W. Beljaeff (Moscow).—Ueber einige Eigenschaften agglutinierender sowie auch anderweitiger spezifischer Serumarten. (Commenced in No. 4.)
85 Experimentelle Untersuchungen über die Ausscheidung der Typhus-Agglutinine. C. Staübli (Zurich).
86 Zur Kenntnis der Symptome und Prophylaxie der experimentellen Lyssa. D. Konradi.
87 Apparat für Anaeroben-Kulturen. S. S. Mereshkowsky (St. Petersb.).
88 Ueber den Nachweis der Typhus-Bakterien in Wasser nach der Methode von Dr. A. E. Windelbandt. E. Schelewsky.

71. Bacteria and the Ciliated Epithelium of the Accessory Cavities.—Törne found in calves and cadavers examined within two hours after death that the nasal accessory cavities were always sterile. He assumes that the ciliary movements are an important factor in preventing the entrance of bacteria.

78. Stain for Flagella.—Gemelli states that the flagella show up beautifully by the simple stain he describes, and that it never fails. He has studied with it the typhoid, colon and cholera germs, proteus, etc. The best media for this purpose are made with glycerin. A loop of the culture is diluted with 5 c.c. of distilled water on a watch glass, and one drop of the mixture is transferred to a boiled cover glass just taken out of alcohol. It is then dried under glass. The cover glass is then placed for ten to twenty minutes in a solution of 25 cg. potassium permanganate in 100 gm. distilled water. The cover glass is then rinsed in distilled water and placed in a stain made by adding 1 per cent. neutral red solution to a solution of .75 gm. calcium chlorid in 100 gm. distilled water, in the proportion of 20 to 1. The cover glass is left in this fluid for fifteen to thirty minutes. It is then rinsed, dried with blotting paper and mounted in balsam.

Deutsche Zeitschrift f. Chirurgie, Berlin.

Last indexed page 215.

89 (LXVIII, 3-4.) Obituary of Eugen Hahn. H. Neumann.
90 *The Appendix in Gynecology. Hermes (Berlin).—Erfahrungen und Veränderungen des Wurmfortsatzes bei gynecologischen Erkrankungen.
91 Bakteriologische Studien an der Hand von 46 Gallenstein-Operationen nebst einem Beitrag über etiologische Fragen des lithogenen Katarrhs der Gallenblase. O. Hartmann (Jena).
92 Crushing and Aspiration of Urinary Calculi. C. Krüger (Berlin).—Zur "Blasensteinzertrümmerung" mit nachfolgender Aspiration.
93 Renal Papillomata. M. Matsuoka.—Ueber multiple Papillome der harnführenden und der harnbereitenden Wege der Niere.
94 Elevation of Scapula. Kayser.—Ueber Hochstand des Schulterblattes mit congenitalen Hals- und Schulter-Muskel-Defecten.
95 Flat Foot and Pes Calcaneus. M. Hofmann.—Zur Anatomie und Mechanik des Platt und Hackenfusses.
96 *Ueber die genuine diffuse Phlebarteriektasie an der oberen Extremität. Löwen (Leipsic).
97 Ueber das Uterus-Papillom. N. Biagi (Rome).
98 Suggestions for an Ideal Surgical Clinic. V. Chlumsky (Cracow).—Ueber Bau und innere Einrichtung einer chirurgischen Klinik.
99 (No. 5-6.) Obituary of Max Schede. H. Graff.
100 *Zur Statistik der operativ behandelten Aneurysmen. H. Jakobsthal. (Commenced in preceding number.)
101 Prognosis of Fractures of Base of Skull. Graf (König's clinic, Berlin).—Prognose der Schädelbasisbrüche.
102 *Ueber Prostatitis acuta mit Abscessbildung nach Furunkulose. A. Söhngen.
103 *Herniotomy on Infants and Children. Grunert (Magdeburg).—Ueber Herniotomien im Kindesalter, insbes. im Säuglingsalter, darunter 2 seltene Fälle von Einklemmung.
104 Zur Casuistik des Exophthalmus pulsans. J. H. Thierry (alparaiso). Two cases.

90. The Appendix in Gynecologic Affections.—Hermes thinks that the appendix is sometimes responsible for affections of the internal genitals, and advises examining it whenever the abdomen is opened for any cause. If signs of inflammation are found in the appendix it should be removed, especially if accompanied by adhesions.

96. Phlebarteriectasia.—Löwen does not refer to varicose aneurism, but merely to general diffuse dilatation of the veins and arteries without communication between them, as he observed in a case recently in his charge. The patient was a locksmith, 43 years of age, and one arm was affected. After excision of the radial dilatations the pains in the fingers were relieved, and he was able to return to his occupation. The affection gradually progressed and amputation is being considered as the last resort. This was done in 4 out of the 6 cases of the condition found in the literature, always forced by threatening hemorrhage. Löwen adds a list of nineteen works on the subject, but it contains no American names. In 3 of the 7 cases the right arm and in 4 the left was affected, and all the subjects were men, with one exception.

100. Statistics of Operative-Treated Aneurisms.—This communication issues from Braun's clinic at Göttingen. In the first part the history of operative treatment of idiopathic aneurism of the subclavian is reviewed, with a bibliography of 94 references and 21 new cases collected since Souchon's statistics of 81 in 1890. In the 21 new cases there were 17 men and 1 woman; the right subclavian was affected in 12 and the left in 5. In 19 cases followed for sufficient length of time 13 were permanently improved and 3 definitely cured. Treatment by distal ligature has 3 improvements out of 5 to its credit; proximal ligature, 5 out of 7; both distal and proximal, 1 out of 2, and extirpation, 3 cures out of 4 cases. The general conclusions of the work are that extirpation is the ideal method of treatment. It not only guarantees a radical cure, but also prevents the pains liable to occur after the aneurism has been obliterated by thrombi. Extirpation is not practicable if the walls are thin and pulsating unless the aneurism is very small and free from adhesions, or if large, is partially obliterated with thrombi. In case the aneurism is adherent to the clavicle and subclavian vein, the parts involved must be resected too. When extirpation is impossible, proximal ligature is next advisable. If the contents of the sac do not become solid after central ligature, a distal one should be applied. The latter alone offers little prospect of a cure. In case operative treatment is impossible Macewen's method of introducing needles and scratching the walls certainly deserves attention, as it proved successful in one case in his experience. As a last resort, electrolysis and "filipuncture" might be tried. Each has one case of improvement to its credit. Judgment is still in suspense in regard to the efficacy of gelatin injections.

The second part of the work is devoted to aneurism of the aorta, reviewing 13 new cases in addition to the 34 of previous statistics. In 10 the thoracic aorta was involved, and in 3 the abdominal. The results of operative treatment demonstrate that simultaneous ligature of the right carotid and subclavian in case of aneurism of the ascending aorta can not be considered a particularly dangerous operation. In a number of cases it was followed by improvement in both the subjective and objective symptoms. The same remarks apply also to ligature of the left carotid or simultaneous ligation of the left and subclavian in case of aneurism of the arch. Reports of the ultimate outcome of the cases on record are needed before final judgment can be passed on this operative treatment.

102. Acute Prostatitis After Furunculosis.—In the case described, as also in 4 found in the literature, the inflammation and abscess formation in the prostate originated in hematogenic infection. In 3 there was pyemic metastasis. The abscess should be incised and evacuated as soon as diagnosis is possible.

103. **Hernia in Young Children.**—In Grunert's 34 cases all were boys but one, and phimosis was noted in 13. The frequency of this coincidence of phimosis suggests some causal connection, and that circumcision might be useful in prophylaxis. None of these patients were Jews.

Zeitschrift f. Heilkunde (Chiari's), Prague.

Last indexed page 142.

105 (XXIV, 3: Surgery, 1.) Structure of Spongiosa of Upper Extremity. K. Büdinger.—Der Spongiosaban der oberen Extremität. II. First part in preceding volume. Seventy-eight cuts and 7 plates.
106 2 Fälle von Teratom der Sacral-Gegend. J. Preindlsberger (Sarajevo).
107 Fall von Fett-Embolie nach Redressement. Ibid.
108 Case of Pigmented, Plexiform Neuro-Fibroma. Ibid.—Fall von Rankenneurom mit Pigmentbildung.

Sei-I-Kwai, Tokyo.

Last indexed XL, page 882.

109 (XXII, 1-5.) *On the Weight of the Encephalon of the Japanese. K. Taguchi.
110 The Impregnated and Non-Impregnated Ova of the Ascarides. K. Miura.
111 Investigations on Poisonous Rice. J. Sakaki.
112 *Tuberculosis.
113 *Public Health in Japan.

109. **Weight of the Brain of the Japanese.**—Taguchi compares the weight of the brain as noted in 397 male subjects, with similar statistics in England. It ranges from 1,345 gm. between 14 and 20, to 1391 between 40 and 50, and declines to 1,333 between 70 and 80. The corresponding English averages for 699 subjects were 1,376 gm., 1,360 and 1,290. The Japanese male brain, therefore, averages higher than the English, as also the female brain. It averaged 1,246 to 1,130 gm. for 766 English women and from 1,264 to 1,102 for 156 Japanese.

112. **Communicability of Tuberculosis.**—An editorial announces that in October, 1901, twelve healthy cows were inoculated with human tubercle bacilli in some official tests at the "Cattle Epidemic Laboratory of the Department of Agriculture and Commerce." In March, 1902, the cows all responded to tuberculin with a pronounced reaction, and when they were slaughtered recently unmistakable lesions of tuberculosis were found.

113. **Public Health Matters in Japan.**—Dr. Yamane, a member of the house of representatives, proclaimed, in a recent debate, that more than 130,000 persons succumb annually to tuberculosis in Japan, and the number is constantly increasing. In regard to leprosy he stated: "There is no country in the world in which this disease is so prevalent and so neglected. The home office returns show that there are 33,059 lepers in Japan, while their offspring number 999,300. The authorities allow leprous beggars to sit on the public streets and to infect the very air with their spittle. . . . A very small percentage are taken into the charitable asylums under French or English management." He also referred to the fact that there are 880,000 trachoma patients in Japan, and that in Tohoku district it is impossible to obtain the requisite number of recruits for the army if some sufferers from this disease are not admitted, adding, "The Japanese army will physically collapse if things are to go on in this manner." In conclusion he raised the question as to whether the prophylactic injections of anticholera serum should be continued, claiming that they had proved practically a failure last year.

Rivista di Patologia nervosa e mentale, Florence.

Last indexed XL, page 1177.

114 (VIII, 2.) Glioma bilaterale del centro semiovale. E. Lugaro.
115 Non-existence of a Peripheral, Interretinic Commissure. R. Rebizzi.—Non esiste una commessura periferica inter-retinica.
116 Bulbar Connections of Vagus. G. T. Allegra.—Sulle connessioni bulbari del nervo vago.
117 Sulle pseudo-allucinazioni (allucinazioni psichiche di Baillarger). E. Lugaro. (Commenced in No. 1.)
118 (No. 3.) Local Action of Urine on Blood Vessels. B. Vasoin and G. Astolfoni.—Azione locale dell'urina sui vasi sanguigni.
119 Alterazioni degli elementi nervosi centrali e periferici consecutive all' avvelenamento subacuto e cronico per C O. F. Federici.

New Patents.

Patents of interest to physicians, June 16, 23 and 30:

730911. Plaster package. Frank F. Hawkins, Troy, N. Y.
731188. Druggist's mass-divider. John W. Jackson, Weston, Mo.
730926. Film for wrapping medicines. Masataro Kobayashi, Ise, [illegible] Machi, Japan.
[illegible] bandage. Lee R. Miller and E. T. Richert, Wm. J. Ruff, Quincy, Ill.
731083. Surgical appliance. Lewis G. Tandy, St. Louis.
731141. Truss. Oakes Tirrill and A. De Vevoise, New York.
730989. Dispensing apparatus. Dayve B. de Waltoff, New York.
731004. Thermocautery. Louis Wirsching, New York.
731543. Massage instrument. John H. and C. Carpenter, Chicago.
731767. Shield for x-ray tubes. Robert-Friedlander, Chicago.
731578. Solid soluble antiseptic. Rene Koehler, Lyons-Monplaisir, France.
731693. Massage roller. Talbot Lennox, Ames, Iowa.
731610. Fumigating tent. Wm. H. Payne, Monrovia, Cal.
731496. Gastroscope. Paul Poirier and P. Michel, Paris, France.
731709. Truss. John Railton, Cheboygan, Mich.
731615. Tincture extractor. Henry Redlich, Chicago.
731973. Nasal inhaler. Charles K. Teter, Upper Sandusky, Ohio.
732035. Pasteurizer. S. M. Barre and C. Mignault, Winnipeg, Canada.
732159. Apparatus for generating formaldehyd. Edgar F. Billings, Boston.
732620. Druggist's dispensing oil can. Joseph A. Dinkler, Anadarko, Oklahoma.
732414. Massage machine. Thomas D. Ingram, Washington, D. C.
732356. Massage instrument. Benjamin E. Joseph, Chicago.
732689. Medicine dropper. Frank A. Liftchild, Brooklyn.
732361. Hernia truss. Heinrich Loewy, Berlin, Germany.
732135. Atomizer. Charles A. Tatum, New York.
36397. Design, water bag. Edward E. Menges, New Haven, Conn.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Uric Acid as a Factor in the Causation of Disease. A Contribution to the Pathology of High Blood Pressure, Headache, Epilepsy, Nervousness, Mental Diseases, Asthma, Hay Fever, Paroxysmal Hemoglobinuria, Anemia, Bright's Disease, Diabetes, Gout, Rheumatism, Bronchitis and Other Disorders. Alexander Haig, M.A., M.D. Oxon., F.R.C.P., Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women. Sixth Edition. With 75 Illustrations. Cloth. Pp. 947. Price, $3.50 net. Philadelphia: P. Blakiston's Son & Co. 1903.

Organic Nervous Diseases. By M. Allen Starr, M.D., Ph.D., LL.D., Professor of Diseases of the Mind and Nervous System, College of Physicians and Surgeons. Illustrated with 275 Engravings in the Text and 26 Plates in Colors and Monochrome. Cloth. Pp. 751. Price, $6.00 net. New York and Philadelphia: Lea Brothers & Co. 1903.

On Syphonage and Hydraulic Pressure in the Large Intestine, with Their Bearing on the Treatment of Constipation, Appendicitis, etc. By Ralph Winnington Leftwich, M.D., Late Assistant Physician to the East London Children's Hospital. Cloth. Pp. 80. Price, $1.00 net. New York: William Wood & Co. 1903.

Protozoa and Disease. By J. Jackson Clarke, M.B. Lond. Cloth. Pp. 177. Price, $2.50 net. New York: Wm. Wood & Co. 1903.

The Public Service.

Army Changes.

Movements of officers of the Medical Department, U. S. A., under orders from the Adjutant-General's Office, Washington, D. C., for the week ending Saturday, July 11:

Rhoads, Thomas L., first lieut. and asst.-surgeon, will proceed to Hot Springs, Ark., and report in person to the commanding officer of the Army and Navy General Hospital for treatment, and when in the opinion of the commanding officer of the hospital he has sufficiently recovered, he will return to his proper station at the U. S. General Hospital, San Francisco, Cal.

Richardson, George H., first lieut. and asst.-surgeon, will proceed to Fort Bayard and report at the U. S. General Hospital for temporary duty during the absence of Capt. George M. Wells, asst.-surgeon, and on the return of Capt. Wells to duty will rejoin his proper station at Fort Logan.

Spilman, R. S., contract surgeon, is granted leave for one month from about June 23.

Truby, Willard F., first lieut. and asst.-surgeon, now on temporary duty at Fort Ethan Allen, is assigned to permanent duty at that post.

Tenney, E. R., contract surgeon, is granted leave of absence for one month.

Woods, Oscar W., contract surgeon, now under treatment at the U. S. General Hospital, Presidio, is relieved from further duty in the Division of the Philippines, and will proceed to Vancouver Barracks and report to the commanding general, Department of the Columbia, for assignment to duty.

Was there any possible way out—save death? 1847.

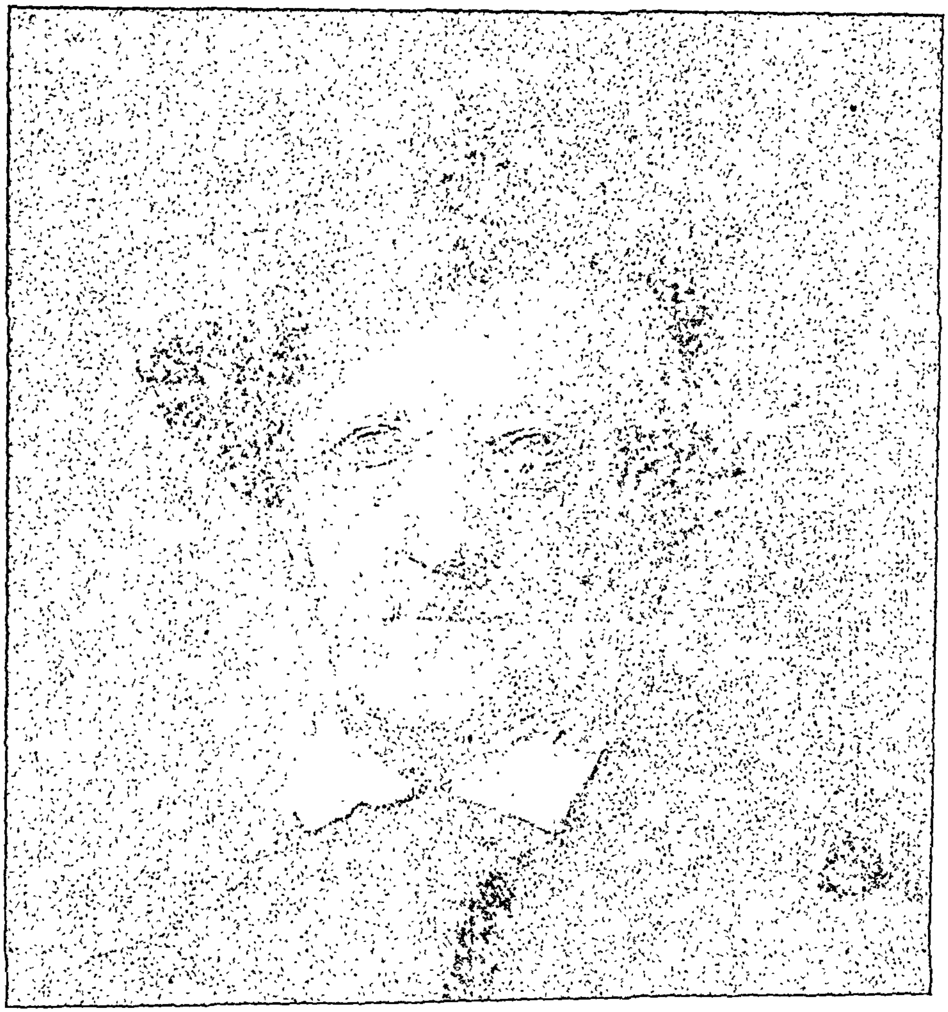
He speaks of a sick bed to which he has been confined for some days. The indisposition must have lasted for at least a month, for in January, 1848, he wrote that he has had a "severe attack of illness." 1847-1848.

He was busy with ideas for a big work from German mythology, but feared he might be too old, and should have undertaken it when younger. 1848—aged 35.

The writing of the Niebelungen Myth is followed by "a period of great depression." 1848.

Winter seems to have been always attended with a certain lowering of vitality. Last year we saw it take the form of a serious illness; this year it takes that of a general depression of spirits. . . He felt "too old" to undertake his Siegfried. 1848-1849.

The sole redemption lay in flight from out this life, in casting off its claims on me by self-destruction. End of 1848.



RICHARD WAGNER.*

Gnawing torments. 1848.

His passport describes him as "of medium stature, brown hair, wears glasses." 1849.

His ancient winter foes return, particularly rheumatism, which this time makes an inroad on his heart. 1849.

He was thoroughly broken down for the present, what with rheumatism and his recent spell of literary work at high pressure. January, 1850.

Feeble, full of pain, unable to sleep, in search of quiet. February, 1850.

I'm happy to tell you I've got to the root of my illness; a violence done to my spirit had aggravated my bodily torments to a dangerous pitch. February, 1850.

He means to take a journey southwards for complete recovery of his health. March, 1850.

I've lost my health, my nerves are shattered. For the present I can live for little more than convalescence. . . . My sufferings became so insupportable that the instinct of life drove me to save myself by breaking with everyone . . . and fleeing into God-knows-what strange land. 1850.

Ah, let us above all things get health. 1850.

Ill, very ill as I was. Letter to Heine, 1850.

Four to five months were indeed too short to devote to a work of such originality and magnitude; too short for the author's own health . . . The last pages of this copy I have written in a mood I can intelligently describe to no one. Candidly speaking, my only wish is to get the hateful manuscript out of the house. Of "Opera and Drama." 1850.

Nine years afterwards Wagner refers to the "fatigue" that had come over him when writing "Opera and Drama," a *fatigue* that "so sorely weighed upon his brain" that he calls it an "abnormal state of mind." *Do.*

I am glad to be able to tell you that I have discovered the nature of my illness; it was to a great extent melancholy; at any rate, a strained state of mind has brought my constitution into the present dangerous and excited condition. 1850.

My illness was the result of melancholy. 1850.

The master has just been ordered to the water cure. 1851.

His health was so broken by previous excess of work. 1851.

Winter is my mortal enemy. 1851.

My headlong mode of working always tells upon me somewhat severely in the end, and I am obliged to recuperate awhile, as usual; for the next few days, accordingly, I can not undertake the making of a copy for you. 1851.

To my joy I found music shaping itself to these verses most naturally and easily, altogether of itself as it were. Only the first beginning of this labor warned me that I should completely undermine my health, if without having thoroughly attended to it, I yielded to my impulse, and pursued—presumably without a break—what I had just begun. So I came to this hydropathic establishment. 1851.

Had I gone to my "young Siegfried" in my present state perhaps I should have become incurable by next spring. Moreover, if I had dragged along with my infirm lower man I should have been highly inconsistent with my principles. The idea of setting to work at my Siegfried in perfect health has something of what I might call a glad solemnity. So — it's settled — I shall undergo the complete water cure. 1851.

I *have become* a complete water man. This time I was ten weeks in the hydropathic *establishment*; only on account of the winter setting in early and with great severity have I given up the cure for the present. However, it was sufficient to give me the clearest foretaste of perfect health, a new and indescribable feeling of comfort, etc. 1851.

This "water" interlude we may take as a not unwelcome relief in the midst of a more intricate topic. What Wagner had to undergo, however, in the vain attempt to diet his body into a condition of robust health, would be past belief in these days of saner physiology had we not his written word for it. Poor Uhlig himself, its original instigator, succumbed to the effects of a less drastic form soon afterward.

It was nearly a twelvemonth since that Uhlig began pressing his "water views" on his leader; Wagner then replied, "I only drink water when I feel a thirst for it; yet I am far less sanguine than you!" (Oct. 9, 1850.) But the idea soon exercised a kind of fascination over him; *in a fortnight* he is *so* far on the road to conversion that he admits its value on the testimony of his younger friend's experience. By Christmas he had commenced to experiment on himself, in an amateur fashion: "I, also, am doing a sort of water cure; besides a sponge down in the morning, cold water drunk in bed." That does not satisfy the zealot Uhlig; he recommends a "Neptune girdle," which sounds something like a wet waistband, and makes one shiver at the thought of wintery cold in Switzerland. Wagner valiantly attempts it. "I followed your advice about the Neptune girdle at once. I hope it will suit me. On the whole I feel surprisingly better than last year." (Jan. 20, 1851.) Two weeks later, however, he has paid the penalty of dabbling. "I'm rather unwell. By the advice of a first-rate physician, who also is an advocate of water, I have had to lay aside the Neptune girdle for a time." And laid aside it appears to have remained, till Uhlig came to Zurich and waxed eloquent about the virtues of a system that decidedly had added neither color to his cheeks nor flesh to his bones.

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*Reproduced from Chamberlain's "Richard Wagner," by the courtesy of Dent & Co.

Uhlig unluckily did more; he brought with him a water volume by a certain Rausse, and well-meaningly left it behind him. On the 24th of August (1851), taking a rest after the labor of fair copying the Communication, Wagner relates how he has begun to turn Rausse's theories into practice during the past week: no wine, no beer, no coffee, no soup; only cold water and milk, so far as drinkables are concerned; 3 to 4 glasses of cold water in bed before rising, and any number of glasses during the day; baths at home, or in the lake at midday; half an hour's walk immediately (!) after food. No wonder he remarks that his head feels "lighter, but often somewhat dull," though he considers the latter a mere passing effect, and expects "to end by getting more health than I shall know what to do with." Naturally the end of another fortnight reveals him in a wretched state, so wretched that he has been to consult the proprietor of a hydropathic quackery (September 8), who equally naturally insists on his coming there, to submit to heroic measures. September 16 Wagner goes to Albisbrunn in the commune of Hausen, on the hills to the southwest of Zurich, too ill to think of any Siegfrieds for the moment.

RICHARD WAGNER.

From Rubenstein's arrangement of the vocal score of Tannhauser This photograph probably formed the basis of Lenbach's realistic drawing.

On the whole, these ten weeks at Albisbrunn appear to have done him temporary good, but rather as a change of air and scene, a relaxation of mental strain, than in any other way. His humor does not forsake him, and it is here that his gigantic plan matures; but when one reads of the treatment to which he is subjected, one can feel nothing save amazement at the power of resistance innate in his constitution. This is how he describes the "cure," a fortnight ere its termination: "My daily program now: 1. From 5:30 to 7 in the morning, cold pack; then cold tub. Wanne and promenade; breakfast at 8, dry bread and milk or water (no butter allowed, as he says in another letter). 2. Short promenade again; then a cold compress. 3. Towards 12 o'clock a wet rub down; short promenade; another compress. Then dinner in my room, to avoid disrelish (was it, or the sight of other victims, so nasty?). An hour of idling; brisk walk of two hours—alone. 4. About 5 o'clock another wet rub down and a little promenade. 5. Hip bath for a quarter of an hour, about 6, followed by a promenade to warm me (surely in a corridor, for it must have been pitch dark by then). Another compress. At 7, supper; dry bread and water. 6. Whist party till 9, followed by another compress; and about 10 o'clock to bed. This regimen I now can manage very well; perhaps I shall even increase it." "I feel myself on the high road to recovery." 1851.

Quiet! Quiet! Quiet! Country! Country! Then—health—cheerfulness—hope! else—all is lost! I can no more. 1851.

Beyond the water business my employment consists in building a house on paper with rule and compass. 1851.

This winter I shall idle for my health, only sketching as thoughts occur to me. 1851.

For the recovery of my youth, for health, nature, an unreservedly loving wife and a flock of children I would barter *all my art!* There, take it! Give me the other. January, 1852.

I have got so far that I place no faith in any system, but only in a specially gifted and sound physician, an individual. For such an one I long, not for any fads. 1852.

The water cure had "worked wonders," as he fondly imagined for a while. "I am basking in a sense of a well-being such as I had never conceived. My indomitable cheerfulness," etc.

At Albisbrunn he had been condemned in the end to baths of but 7 degrees above freezing point; at home he has raised their temperature to the more civilized limit of 55 F., but mental rest is strictly enjoined on him, together with a diet which he describes as "dry bread" and milk for breakfast, dry bread and water for supper; at midday English cooking, i. e, vegetables boiled plain and meat roasted on the spit . . . The water business he still has so at heart that he writes to Sulzer a defense of it three quarto pages long, though the only extract published by Herr Steiner does not make clear whether outward or internal application is the bone of contention: "As I could not possibly subside into a merely casual acquaintance with a man who has been and is, at a crucial period of my life, what you have been and still are to me; a man I sincerely respect in the warmest sense of which that word is capable—the ultimate consequence (of Sulzer's recusance) would be that I must give my Zurich haven up; a necessity I feel so deeply that I was compelled to declare it yesterday to our two friends." It is difficult to believe that such earnestness has reference to nothing more serious than a divergence of views on the efficacy of water; but, however we interpret it, Herr Steiner further informs us that, rather than allow the split to go to such a length, Sulzer made certain "concessions."

As for Wagner himself, departure from a strict observance of cold water soon was forced on him by the same consideration that had started it—his health. All through this winter, in fact until next autumn, we hear of one modification or another, in the endeavor to restore a shattered set of nerves, culminating in the lesson of experience passed on to Uhlig next October: "Our water doctors, one and all, don't know enough about nerve troubles. Constitutions like mine are benefited by none but warm baths, whereas cold ones ruin them entirely. If I can only get my nerves right, you'll hear another story!" The same with his teetotalism, which is wisely abandoned at last for an occasional glass of good wine. Had he but had his good Dresden doctor Pusinelli within arm's length, instead of various experimenters on a bodily constitution they understood as little as his critics his artistic theories, perhaps the music of the Niebelungen might have actually been finished in not much over the three years originally propounded for its term. But the awl of the amateur health cobbler was picked up first by one friend, then by another, till the letter last quoted avows: "For the present my doctor is Herwegh: he has great knowledge of physics and physiology, and is more sympathetic toward me, in every respect, than any physician who is not at the same time a friend." February, 1852.

"I'm terribly fatigued again." March, 1851.

I am daily thinking of my death. 1852.

I can not pull round as yet, and am suffering from sleeplessness with great dejection. *Do.*

Beethoven, the Holländer, ill health, sleepless nights, repeated disillusions—all were factors in the evolution of that colossal drama which had occupied his brain ever since he returned from Albisbrunn. G., 1852.

I am now living for nothing but my health. I am taking a rest after the somewhat trying effects of my late cure. Dec. 14, 1851.

It is to no water establishment that Wagner goes this time, as once proposed; his faith in that drastic regimen has been rudely shaken during the last few months. Moreover, "it is quite impossible for me to spend half a year at a hydro." Not long ago he had heard through Ernst Kietz of a certain Dr. Karl Lindemann, a fellow exile, then "working remarkable cures in Paris with a marvellously mild water régime. His specialty seems to be nervous disorders." So he had written Lindemann a detailed account of his symptoms, and received a regular chart of instructions to cover a protracted period: for diet, chiefly game simply cooked, with a glass or two of good wine; his baths to be tepid rather than cold; the main affair—"I'm to keep quiet and write poetry." May, 1852.

The open air is doing me much good; every morning I roam about for two or three hours before setting to work. My working time I don't extend beyond two hours a day; it was by frequently working five to six hours that taxed my nerves before. I have finished the entire draft of the Walküre now. May, 1852.

His lonely walks. *Do.*

Yesterday I finished my Walküre after a month of work. . . . once more I am somewhat severely knocked up; no doubt I work at too high pressure. July 2, 1852.

When I've finished a thing like the Walküre I always feel as if I had sweated a huge anxiety out of me, an anxiety ever increasing toward the end of the work, a kind of dread lest I should spoil something: my signature and date foot the page, as though the devil were standing behind me, trying to stop my last stroke. Much the same had it been with the scoring of Tannhäuser: The nearer I approached its completion the more I was haunted by the notion that a sudden death would stay my hand; only there is a new element here. *"Lest I should spoil something."*

I was going to begin the composition and found to my joy that the music adapted itself to these verses quite naturally and easily, as if of its own accord. But the very commencement of the work reminded me that I should ruin my health entirely if I did not take care of it thoroughly before yielding to my impulse and finishing the work at a stretch and probably without interruption. When I went to the hydropathic establishment, etc. (November, 1851. Letter to Liszt.)

My previous continual anxiety about my health has also now been relieved by the conviction I have since gained of the all-healing power of water and of Nature's medicine; I am in the way of becoming, and if I choose, of remaining, a perfectly healthy man. If you wretched people would only get a good digestion, you would find that life suddenly assumes a very different appearance from what you saw through the medium of your digestive troubles. (November, 1851. Letter to Liszt.)

I am still occupied in resting from the finally somewhat powerful effect of my cure. December, 1851.

We sedentary animals scarcely deserve to be called men. How many things we might enjoy if we did not always sacrifice them to that damnable "organ of sitting still." 1852.

The nerves of my brain are so overwrought that even these few lines set me in a violent commotion. I find that I may be able to do something good, but *only* on condition that I keep a strict watch on myself, and especially that I interrupt my work often and completely divert my thought before going on again. May, 1852.

Then I had a sublime view of the terrible mountain world of ice and snow and glacier, which seems to be so close that one might clutch it—I am walking capitally, quite strong on my legs; only I'm *not contented* with my head as yet. The nerves of my brain are hideously out of order; agitation or prostration—never any time true repose. July, 1852.

My digestion has been in a very bad way of late. *Do.*

Peace I did not find. It's all up; there's no youth left in me; to live stands no longer before me; all my making and doing can now be naught but gradual decay. The nerves of my brain, there's the trouble. *Do.*

Unfortunately I can work but slowly, as everything is an uncommon tax on my brain just now. Only to-day have I finished the MS. of my address on the performing of Tannhäuser. . . . It has taken much out of me, and I shall have to try to rest it off. August, 1852.

Throughout the whole of these six months we hear one constantly repeated cry of "headache," as if the twofold strain on the mind were wearing out its organ. At no other period does the physical suffering appear to have been at once so acute and so protracted. Is it a condition normally attendant on the birth of a colossal masterpiece? "My health is none of the best, and although my body looks fairly robust, my nervous system is in a serious state of increasing exhaustion. Through this everlasting life of phantasy without any corresponding reality, the nerves of my brain are so severely overwrought that I can only work by spurts now, and with long interruptions, if I don't mean to become a complete and chronic wreck." *Do.*

From the perpetual expression "the nerves of my brain" ("meine Gehirnnerven"), coupled with the apparent "robustness of body," I should argue (writes Ellis) that the malady was nothing deeper-seated than megrim, alias migraine or "sick headache"; but anyone who has ever been a victim to that scourge, similar in many of its nervous symptoms to "influenza," will recognize the sheer impossibility of mental application when an attack is in full swing. The various forms of dieting to which Wagner had subjected himself would only tend to lower the general tone of the nerves, and thus exacerbate the malady; whereas the last thing a sensible physician would have advised would have been the climbing of dizzy Alps and the forced march across the Italian frontier, which the patient had undertaken on his own account by way of recuperation. And on his holiday to be plagued with business details, *too!* The result is, that he returns to Zurich so prostrated that he exclaims to Uhlig a day or two after: "You people mustn't talk theory any more to me just now; it sends me clean crazy. The nerves of my brain! there's the mischief. I've terribly assaulted them; it's quite possible I may yet go mad!" August 9, 1852.

And so it goes on, with variations of the same complaint (chiefly addressed to Uhlig), at least until the Rheingold poem is completed and the greatest load thus discharged from his mind. At first, in fact, it is impossible even to think of poetry. "I've written Heine to-day. My head is not yet clear enough for working." August 11.

"Unfortunately I'm getting on very slowly (with the Tannhäuser Guidel), as all manner of work tries my head uncommonly just now." August 14.

"If my head were but better! With that cursed brochure, which I rushed at last so as to polish everything off, I ruined myself again. Often it's like a sharp knife cutting into the nerves of my brain. Moreover, I'm feverishly tired in all my limbs; but if only my head will recover, they also will rapidly improve; on it—that laboratory of the imagination—depends everything. . . . Forgive me my many commissions; but if you don't do a double turn for me now, 'twill be all up with me. Think of it! even this letter almost knocks me down." August 30.

There cause and effect are plain as can be; the Tannhäuser, with all the correspondence involved, has told severely on an excitable system, and the "nerves of his brain"—scientifically speaking, the region round about the optic thalami—must pay the penalty. That "sharp knife" cutting, the "feverish tiredness in the limbs," and the sense of impending evil, are the very symptoms of megrim; the attacks of which, especially if brought on by mental labor, may sometimes be prolonged for several days by successive relapses.

"Only two lines; I mustn't write, because I can't; that's how things stand with me"; and after barely a dozen lines, "I can write no more. Good-bye." Three days later an equally short letter, so unusual in this correspondence, ends with "That's all I'm able to squeeze out to-day. Don't take it amiss!" September 8.

On the same date that notable letter to Liszt about Raff, Berlioz and new creations (p. 360 ant.), begins and ends as follows: "Unluckily I can't reply to you as I should wish. The nerves of my brain are so racked again that I have had to give up all writing and reading for a while—I might almost say, all mental existence. Every letter—even the briefest—knocks me terribly up, and nothing save the greatest quiet (where and when?) can—or rather, could—put me really right. . . . I can write no more now! Don't be cross with me! My head is nigh bursting! I'll just hurriedly add the warmest farewell I have in my heart." Another three days later: "My head is still bad, and all my nerves upset, in consequence of this eternal friction with an invisible load outside. . . . Farewell, I must stretch myself full length on the divan, to close my eyes (to U., September 11).[1] Next day we have the letter to Roeckel, cited a page or two back. A week after that: "I am growing accustomed to the ruin of my nerves; one can always do a little something with them still. . . . To-day is the federal fast day, and for the last week the Föhn has been enough to make one wish one's nerves at the Devil." The Föhn is a moisture-laden south wind peculiar to the valleys and lakes of Switzerland, but similar in its general effects to the sirocco so prevalent at Venice, etc. Its humidity would really seem to have eased the writer, however, much as a vapor bath might; for, not only does he indulge once more in a good streak of his pristine humor in this letter of September 19 to Uhlig, but also has important news for us: "My condition isn't a hair's breadth better yet; only I'm *gradually* accustoming myself to a fresh degradation of my health; I'm accommodating myself to it, and even work a little hour a day now!"

Progress with the poem was by no means break-neck at first: "a little hour a day." Nor even every day; for a fortnight later the intimation to Liszt runs, "My nerves are still none of the best; yet I have begun to work a short hour a day at my poem again, off and on. There'll be no peace for me till I know it is finished, which I hope will be ere long." October 3.

The presence of Belloni and Vieuxtemps would scarcely expedite matters, and October 5 we read (to U.), "I shall tell you nothing about my work; it's going slowly, but well!" Unhappily the next sentence is ominous: "Farewell and healthier than me. I shall shortly go crazy!"—a repetition of the fear expressed two months ago. Before a week is out the poem has to be laid aside: "That I am able to write you at all to-day is simply due to my decision to make a forced *pause in* my poetic work, not to fall once more into that fatal condition the most painful effects of which I have only just outrun a little. Letter-writing, however, I now am convinced once for all severely taxes me, and you therefore may flatter yourself if I manage even to fill this sheet of paper. If the weather were not so inveterately bad I should have started to-day on a couple of days' excursion. Already I had mapped out a tour to Glarus and Schwyz. Unfortunately, with this eternal gray dampness of the atmosphere I shall have to adjure any pleasure trip; simply my afternoon walk I keep up, mostly three to four hours, however hard it rains, albeit with a hang-dog sort of pleasure." October 11.

The "sheet" gets filled to overflowing, nevertheless, and lower down this letter we learn that "warm baths of 86 degrees for half an hour in the evening just before going to bed" have helped him much. "Without that bath I should have been a lost man by now; it quiets my nerves and gives me good sleep every time. Lindemann has even advised me to take a similar bath for half an hour in the morning, if I want to get rapidly well; for the present I only take a short one in water chilled to 77 degrees. My head I repeatedly douche with colder water during each bath." It is while thus "comparing notes" with a brother invalid, poor Uhlig, that Wagner receives the elating news of the Breslau success of Tannhäuser.

(To be continued.)

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[1] Under the heading "Megrim (migraine, hemicrania, sick-headache), a standard English medical authority remarks: "During the paroxysms nothing is so efficacious as complete rest in the recumbent posture, in a perfectly quiet and darkened room." The further statement that his malady "generally subsides with advance of years Patients do not often suffer from it after 50," bears out my diagnosis, since we do not hear of these sick headaches when Wagner has passed that age.—W. A. E.

EPISPADIAS.

REPORT OF A CASE OPERATED ON BY A MODIFICATION OF CANTWELL'S METHOD.*

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The purpose of this paper is to again call attention very briefly to an almost ideal operation for the relatively rare but distressing deformity, epispadias; and, further, to describe a modification of the original operation which the writer found it necessary to make in the single case on which he had the opportunity of operating.

This operation, described by Cantwell[1] in 1895, performed by Herbert Page,[2] in 1898, and again by Parham and Martin[2] in 1900, seems not to have gained the recognition it deserves, and not to have found its way into the recent text-books of surgery.

Bryant voices the sentiment of practically all the text-book writers when he says: "The ability to secure as satisfactory results in this deformity as have been secured in hypospadias has not yet been attained."

The procedures usually recommended are similar to the plastic operations applicable to the condition of hypospadias, and of these the methods of Thiersch and Duplay are the best and most useful examples. But these operations leave much to be desired, both from the standpoint of functional result, in overcoming the incontinence, and the length of time required for the progressive steps.

Cantwell's operation, having for its object the transplantation of the newly formed urethra to its normal situation beneath the body of the penis, permits a quick result to be obtained, and relieves entirely, or in a marked degree, the distressing incontinence.

TECHNIC BY CANTWELL.

Briefly described, the operation of Cantwell is made as follows: A curved pair of forceps is first introduced into the bladder and its point made to bulge the perineum. This is cut down on and drainage of the bladder provided by means of a rubber tube which is left in place until the process of healing is complete. Next an incision is made on both sides of the penis at the junction of the mucous membrane and the skin beginning proximally at the opening of the bladder, and extending distally to the end of the glans penis. The meatus is usually just under the pubic arch. The mucous membrane lining the groove on the dorsum of the penis, and marked out by these incisions, is now dissected up, care being taken to carry the dissection well back to the infundibulum, almost to the bladder wall.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

[1] Annals of Surgery, December, 1895.

[2] Ibid., January, 1901.

When this is thoroughly done the urethra can be drawn out surprisingly. This mucous membrane flap is now converted into a urethral tube by suturing its free edges together, and should be long enough to reach quite to the end of the glans penis.

Next a new bed for the urethra is made by dissecting apart the two cavernous bodies, leaving them attached only by the skin at the under surface of the penis. In the normal penis this separation would be most difficult, but in epispadias is extremely easy. This separation should be carried well back behind the pubic arch, so as to transplant deeply the urethra for its whole length; a slight incision is necessary in the glans. The urethra is now transplanted into this groove between the corpora cavernosa, a few sutures serving to anchor it to the underlying skin of the penis. Above the urethra the corpora cavernosa are brought together and united by continuous suture; and finally the overlying skin, which is usually abundant for the purpose, is sutured over all. This produces a penis which presents a surprisingly normal aspect, except for the apron of foreskin.

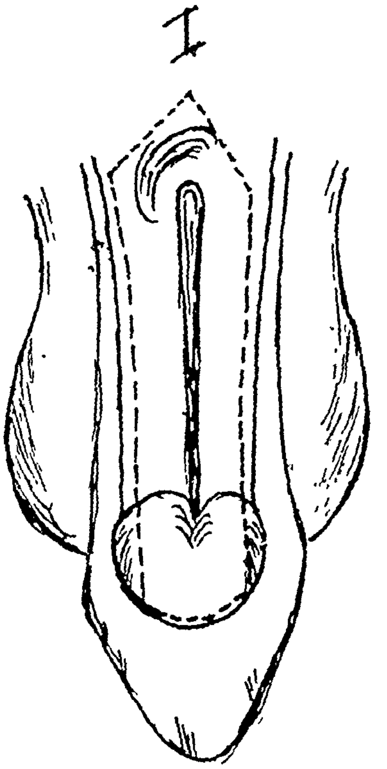

Fig. 1.—After Cantwell.

If healing occurs by first intention, the whole procedure is through with in two weeks' time. The patient is able to retain his urine almost perfectly in some cases, and can void a full stream through a meatus at the normal situation in the glans penis.

MODIFIED METHODS.

Cantwell recommended that the operation be not undertaken under 10 years of age, because of the small size of the parts and the presumption that the younger the patient the more dangerous any operation. The case reported by Parham and Martin, however, was only 5 years of age, and my own was 7 years of age. There are certainly reasons why it is advantageous to perform the operation at an earlier age than originally recommended by Cantwell. My own patient, operated on in 1901, was a boy of 7 years, otherwise healthy and well developed. The meatus was beneath the pubic arch, and the foreskin hung down in a well-marked apron. On dissecting up the mucous membrane over the sulcus and the glans penis, it was found impossible to avoid injuring this portion of the mucous membrane to such an extent that it had to be discarded and cut away entirely. As a consequence, the new made urethra was *too short;* even after thoroughly mobilizing it and drawing it well forward it could only be made to reach a point well behind the glans penis. It was therefore found necessary to adopt the suggestion made by Parham to combine Van Hook's method[3] of tubular canalization with Cantwell's urethral transplantation. Van Hook, in a case of hypospadias, made a canal by tunneling through the glans penis, and then lined this canal with a pedunculated flap, converted by suture into a tube, taken from the preputial hood. The distal end of this flap, now become proximal, was finally sutured to the distal end of the urethra, so completing the canal.

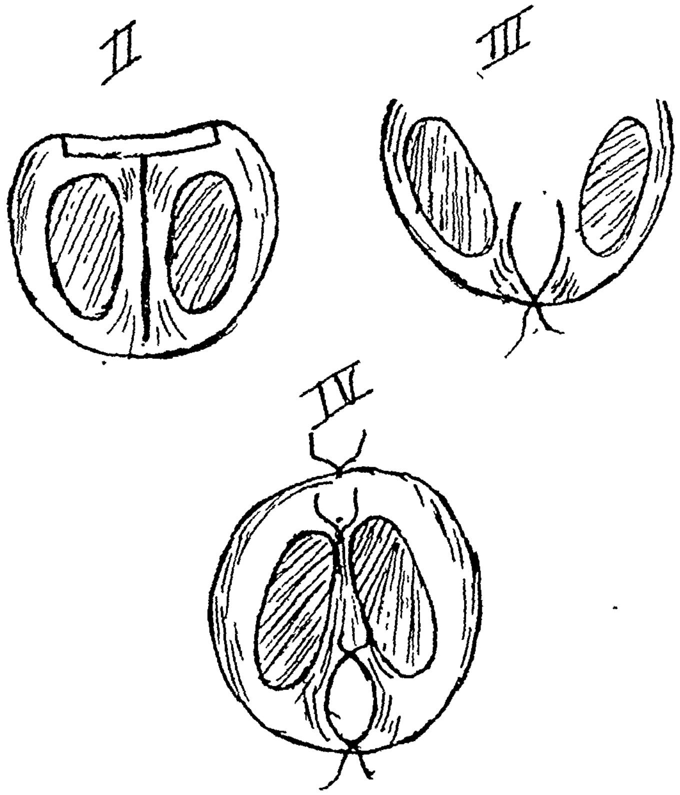

Fig. 2.—After Cantwell.

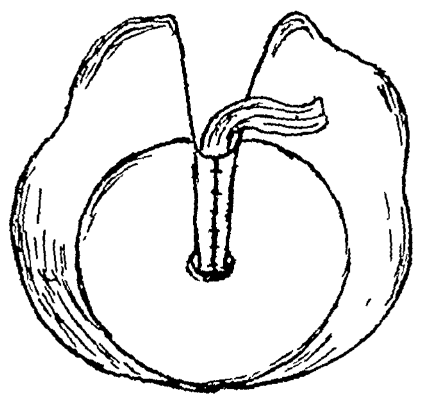

Fig. 3.—Van Hook's operation; forming preputial lining for tunnel through glans penis.

In my case a sufficient flap was cut from the underlying preputial apron, was then converted into a tube by suture, and finally was drawn through a tunnel made through the glans penis. It was then united over a soft catheter to the already formed proximal portion of the urethra. The remaining steps of the operation were

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3. Annals of Surgery, vol. xxiii.

carried out in accordance with Cantwell's recommendations. The success of the operation was surprising. With the exception of a pin-hole opening situated a little in front of the pubic arch, there was healing throughout by first intention. At the end of ten days the perineal drainage was withdrawn, and three weeks after operation the boy was exhibited to the Falls City Medical Society. He had been instructed to retain his urine for several hours before exhibition, a thing utterly impossible before operation. Just as he was placed on the table he found it impossible to longer retain his urine, and discharged several ounces over the table and carpet in a stream from a meatus situated at the end of the glans penis.

Singularly enough, I found the closure of the pin-hole fistula more difficult than the original operation. Having failed in one effort to close it, opportunity has not yet presented to successfully deal with it.

This boy's continence has markedly improved. A recent report informs me that there is occasional dribbling by day and sometimes wetting of the bed at night; but this latter is not by dribbling, but by voiding at one time a bladder full of urine.

In conclusion, I desire to say that I feel satisfied that no other operation, in my hands, could have produced anything like so good a result in anything like the short space of time.

DISCUSSION.

Dr. F. W. Parham, New Orleans—I think the condition of epispadias, although an extremely rare condition, merits our serious consideration, because when present it is so very distressing. I find myself in the singular position of making suggestions in the treatment of a condition wherein I have not had a single case to operate on. However, I have had the good fortune to assist my friend, Dr. Martin, in such a case, and I have seen another case in which Dr. Fenner has obtained a very satisfactory result by the method commended in the paper of Dr. Bullitt. The old operations of Nélaton, Rosenberger and others did not fulfill the conditions because, although they effected the re-establishment of the canal, this was too pouch-like, and the incontinence was not relieved. Beside, the time required was too long. None of the later operations have proved satisfactory, except that of Cantwell of Trenton, endorsed by Dr. Bullitt in his paper. I have looked up the subject thoroughly, and I find no procedure that can compare with it in simplicity and results. Cantwell's operation at once places the canal below the organ, where it belongs, and the whole operation can be finished at one sitting. In the normal penis the union of the corpora is very intimate, indeed, so intimate that the fibers of one side seem actually to decussate, but the connection is very frail in the epispadiac condition. English, in fact, reported one case where the corpora were completely separated. In some cases the separation may be made without cutting. In the technic of the operation I have learned in the case in which I assisted Dr. Martin that it is well to carry the dissection well up under the pubes so as to mobilize the trough freely, and then to make the canal carefully before separating the corpora and carrying it to its place under the organ. One difficulty in the operation is to get the canal placed far enough forward in order to allow for retraction. In some cases a second operation will be required to locate the meatus properly. I believe the addition of the Van Hook plan, as carried out by Dr. Bullitt, will prove of decided benefit, because it assures the meatus at the proper point, and I feel personally indebted to Dr. Bullitt for showing by his case that it has distinct advantages.

Dr. E. D. Martin, New Orleans—My case amounted almost to exstrophy of the bladder. It was necessary to dissect an anterior flap from the pubis in order to complete the upper border of the urethra. This was sutured on either side and the tube, being completed, was buried between the corpora. The case has been greatly improved, though the incontinence has not been entirely overcome. This I hope to correct with the use of paraffin injections.

In regard to hypospadias, I would like to make a suggestion which I think is of some value. I had very recently a case in which I tried the suggestions of both Rochet and Nove-Josserand. The method of the former of making a tube of scrotal tissue and passing it under the skin was only partially successful. The latter, of wrapping a Thiersch graft around a catheter and pulling it through the slit, failed also, and I then divided the corpora the full length of the deformity, laid them wide open and covered the entire raw surface with a Thiersch graft. This succeeded beautifully. I then brought the corpora together, forming a deep groove all the way. I pared the edges freely, held the corpora in position with mattress sutures and sutured the margin of the skin with catgut. All united, with the exception of a small fistula on the junction of the newly-formed canals, and I agree with Dr. Bullitt that these are always difficult to close, and that perineal drainage is always necessary to insure success.

Dr. Erasmus D. Fenner, New Orleans—I had a case in which I had an opportunity to treat acute epispadias, and my case was very considerably below what I believe to be the proper age limit in these cases. The patient was not quite five years of age. Fortunately for me, however, the little boy was remarkably intelligent for his age, and assisted me in every possible way by his great patience, thus overcoming the objection that has been made to doing the operation at this age. In connection with this operation I wish to say that my knowledge of the procedure is due entirely to the excellent recollection of my friend, Dr. Parham. Shortly afterward I had an opportunity of seeing Dr. Martin's case, and the steps of the operation were simply the mere separation of the parts by Cantwell's procedure. I was impressed, first, by the expansibility of the tube, and second, I was impressed by the fact that it was free, so that it could easily be drawn up above the urethra after it had been placed in its position. I was further impressed by the absolute necessity of using a silk suture. Up to that time I had used chromicized catgut. I decided to use internal silk suture. The approximation was satisfactory, and for a few days the case did well, but shortly afterwards the parts began to swell, and there developed between the skin and the urethra a large abscess which subsequently required opening up of the skin, and breaking the abscess and allowing it to escape. Fortunately, however, the operation was not associated with any serious fistula in the new canal, and after a rather tedious convalescence, my little patient recovered, having a perfectly normal restoration of the anatomy, although I found that the meatus was placed a little too far back for the normal condition. I have not yet made up my mind how to unite that. I am convinced, however, if we could let the patients wait until they are 10 or 11 years of age, so that they can have control of the bladder, we could get much better results.

I have suggested this same procedure for hypospadias. Not long ago I had an opportunity of operating on a patient suffering from hypospadias. In this case, we concluded that we would leave out the buttonhole in the peritoneum. The patient left after the operation in a very much worse condition than before. Taking this case into consideration, as well as my case of epispadias, it would seem that the buttonhole in the peritoneum should not be omitted.

Dr. James B. Bullitt, Louisville—The speakers have testified that this operation gives fairly good results, and in some cases surprisingly good results. I would have liked to have heard from some of the other gentlemen who have employed other methods in regard to what they have been able to accomplish. I have only had two cases of this condition, and the first case was operated on by the method usually applicable to hypospadias, and the patient was not improved, and I have no doubt that there are others who have had the same experience. So it is especially gratifying to me to have accomplished the result I did in the second case. Outside of this small fistulous opening the patient was cured, and he got up inside of three weeks' time. I agree with Dr. Fenner that the drainage of the bladder through the perineum is always necessary. I believe also when you have a fistula it would be better to drain the bladder through the perineum.

What part of the operation is the most difficult? In the first place getting the mucous membrane clear to the end of the glans penis. It is nearly always impossible to find sufficient mucous membrane to reach to the end of the glans penis. While the urethra can be drawn out surprisingly, it also retracts afterward somewhat surprisingly. I am sure that Dr. Parham is entitled to great credit for the suggestions he has made. I believe in the case I operated on, if I had separated the corpora cavernosa further back, I would have had a better result, and this fistula would probably not have occurred. The third point is that the formation of the canal from the point where the abnormal meatus is situated is somewhat difficult. However, I believe from the success of this operation in my own particular case, and from these other operations that have been reported, that it is very much superior to any of the other operations that have been proposed.

TUBERCULOSIS OF THE MAMMARY GLAND.[*]

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Dr. Scudder,[1] in an exhaustive article on "Tuberculosis of the Mammary Gland," states that an examination of the literature showed only eighty cases reported up to that time, twenty-three of which were rejected on account of imperfect data. This list, however, does not include twelve cases reported by Albert in his work on surgery.

Tubercular infection is so frequently met in the various tissues and glands of the body that it seems unusual that only fifty-seven well authenticated cases of tuberculosis in the mammary gland should have been reported up to 1898. It is, of course, to be expected that not all cases diagnosed as tuberculosis of this gland were reported, but had they been, the number would still be small, and the cases reported since 1892 are so few that we are forced to believe that the disease often goes unrecognized.

It is conceded that tuberculosis of the mammary gland is most frequently found in young women between the ages of 20 and 35, or during the period when the gland is functionally most active. A few cases have been reported as occurring before and after menstrual life. Roswell Park reported a case in a girl 12 years of age, and Mr. Payne saw an infant with a tubercular abscess of the breast, following which there was general tuberculosis and death. Several other cases have been reported at ages under 20. Cases have also occurred in women after 50 years, and even after 60 years of age. The condition is occasionally observed in men. In Dr. Scudder's eighty cases six were males, and in forty cases reported by Mandry one was a male. It is said that more than one-half of the women affected have borne children, and that in a considerable number of these the process has originated during pregnancy.

It is held by the great majority of writers, and this I believe to be true, that the process is to be observed most frequently in spare, weakly, anemic individuals, in those who have inherited the so-called scrofulous diathesis or tubercular predisposition, and especially in such as have a parent or near relatives who have or are suffering from tuberculosis. Tubercular infection of the mammary gland may be primary or secondary. When primary it may occur through the milk ducts or through abrasions of the nipple or of the skin covering the breast. It is thought that the great majority of cases are secondary to a tubercular process in the lymphatic glands of the axilla or neck, or to one in an adjacent rib, pleura or lung. The focus, however, may be situated in distant bones, in the genito-urinary or intestinal tract, in the peritoneum or skin. When secondary and the foci are situated more or less remotely, infection may occur, and frequently does, through the arterial circulation. Infection undoubtedly takes place, however, in many of these cases through the lymphatic circulation by a retrograde process. Retrograde infection or infection carried against the lymph current is seen every day in cases of carcinoma. A case of epithelioma of the nipple came under my observation in which there were metastatic growths in the membranes of the brain, these having taken place through the lymphatic circulation. It is also of frequent occurrence in carcinoma of the mammary gland to observe enlargement of the lymphatic glands of the neck. Although it is held that the bacillus of tuberculosis is non-motile, it is probably true that these bacilli are often carried against the normal lymph current by cellular action or by reverse currents. Infection may also occur by contiguity of structure in cases where the submammary tissues, the adjacent ribs, or parietal pleura are implicated. If infection occurs through the milk ducts, the process must be situated primarily within the ducts or the acini. If the bacilli reach the breast through the circulation, lymphatic or arterial, they would naturally be arrested in the tissues directly surrounding the alveoli, as here the arteries which supply the gland break up into a network of capillaries, while the lymphatic radicles take origin within and about the lobules of the gland. When infection occurs through contiguity of structure the connective tissue of the gland will be primarily implicated.

THE ANATOMY.

It might be well in this connection to review briefly the anatomy of the lymphatics of the chest for the purpose of determining the possible channels of infection to the mammary gland through these vessels. It is generally held that the lymphatics in the mammary gland of the female are more highly developed than they are in any other gland in the body. They are generally divided into two groups, the superficial, which passes to the axilla, and the deep, which follows largely the branches of the internal mammary artery and goes to the anterior mediastinum. The axillary glands may be divided into three chains. The first, or superior, lies along the lower border of the pectoralis minor muscle, and is in relation with the long thoracic vessels.

It receives most of the lymphatics from the upper and outer portion of the mammary gland, the front of the chest and from the abdominal wall above the umbilicus. The second or middle chain is situated in the adipose tissue of the axilla and on the inside of the axillary vein. It receives the lymphatics largely from the upper extremity, and the efferent vessels from both the superior and posterior chains. The posterior group lies along the posterior border of the axilla in relation with the subscapular vessel. It receives the lymphatics from the scapular region of the back and from the inner and lower quadrant of the breast. The deep lymphatics of the gland anastomose freely with the superficial and with those from the pectoral fascia. Some of these vessels from the outer side go to the axilla, while others accompany the intercostal vessels and enter the right lymphatic or left thoracic duct. The deep lymphatics, which originate in the inner hemisphere of the breast and in the inner portion of the pectoral muscles, penetrate the second, third and fourth intercostal spaces and communicate with the glands, six or eight in number, which are situated along the internal mammary artery.

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[*] Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

[1] Amer. Jour. Med. Sci., July, 1898.

LYMPHATICS OF THE LUNGS.

There are two sets, the superficial and deep. The superficial is placed beneath the pleura as a minute plexus covering the outer surface of the lung, communicating freely with the pleural cavity, and invading the interlobular tissue. It terminates at the root of the lung in the bronchial glands. The deep set commences in the mucous lining of the bronchial tubes and accompanying the vessels terminates in the pulmonary lymphatic glands situated along the walls of the small bronchi and in the angles of their subdivisions. There are about forty glands in the right lung and thirty in the left. Efferent vessels from these pulmonary glands join with the superficial lymphatic vessels and end in the bronchial glands. The efferent vessels from the bronchial glands communicate with the mediastinal glands and traverse the tracheal and esophageal glands, terminating on the right side in the right lymphatic, and on the left in the thoracic duct. There may be, then, a direct circuit of lymph by retrograde action from the neck and axilla to the breast, and from the lungs, pleura and pulmonary and bronchial glands through the mediastinal glands and their lymphatics along the branches of the internal mammary artery to the breast. The arteries which supply the breast are from the thoracico-acromialis to the upper lobes, from the long thoracic and external mammary to the outer lobes, and from the anterior intercostal and perforating branches of the internal mammary to the inner lobes. Each gland consists of from fifteen to twenty tubo-racemose glands bound together by connective tissue and united into a hemispherical mass by adipose tissue. Each lobe has its own excretory duct. The acini, either sacular or in the form of tubules, are grouped together to constitute lobules. They are limited by a distinct membrane and lined by either columnar or polyhedral epithelial cells. The blood vessels run mostly in the superficial tissues radiating toward the areola, and from these vessels branches penetrate into the glandular mass and pass between the lobules, giving off twigs which break up into capillaries enclosing the alveoli. Naturally, then, if the bacilli are brought by the blood vessels to the gland they would become implanted on the alveoli or they might pass through their walls into the interior. The latter unquestionably may occur, and does during lactation. If the bacilli are arrested in the capillaries the tubercular process set up would be an interacinous one. If they pass into an acinus or duct and become arrested the infectious process would be within the acinus or duct. The lymphatics also run in the connective tissue stroma of the gland and commence as a network of capillaries within and around the lobules. Their radicles have practically the same distribution as have the capillary blood vessels. In consequence of a retrograde action in the lymph current the bacilli would also become implanted about the acinous wall. or possibly carried into its interior.

PATHOLOGY.

The bacilli being implanted within the tissues of the gland set up an irritation which is followed by the usual pathologic change. Round cell infiltration occurs with the formation of epithelioid and giant cells. The bacilli are often to be found in the exudate, while tubercles or tubercular masses with caseation or pus formation often occur. It is characteristic of those cases which remain for a long time as hard nodes for the microscope to show the formation of a large quantity of interacinous connective tissue. In a considerable number of my cases some of the hard nodes were made up largely of dense fibrous tissue situated between sparsely distributed acini. In these cases there will be areas of distinct caseation or those in which giant cells are to be found or the bacilli of tuberculosis and even in some in which these conditions are not demonstrated the axillary glands will show caseation and the bacilli of tuberculosis. In cases in which the infection is directly through the milk ducts or glandular structure, the process, aside from its situation, will be much the same as before with the exception that in a considerable number of these pus may be forced from the abscess cavity by pressure along the ducts and from the nipple.

SYMPTOMS AND COURSE.

The clinical picture presented by a tubercular process within the breast is a variable one. It will depend largely on the stage of the disease during which the examination is made, on the number of foci primarily infected, and also on the fact as to whether the process is primary or secondary. In many of these cases, as can be readily appreciated, the primary disease will be of such importance or severity that the condition of the breast, even if severe, will be of little or no moment. The patient's attention may first be called to the process by pain which is usually early experienced, pretty continuous and has a dull, heavy, aching or burning character. Not unfrequently, however, the pain is scarcely noticeable, and the patient's attention is first attracted to the breast in consequence of finding therein a node or nodes. These nodes, and there are usually more than one, are reasonably hard, not very sensitive and quite irregular. They can not be distinctly separated from the glandular structure, and ordinarily vary in size from that of a hazel nut to half an inch or an inch and a half in diameter. They are very seldom round, but are flat or have a very irregular contour. These nodes are often distinctly separated, but still lie in the same quadrant of the breast. The fact of their being multiple nodes is a characteristic of the disease. The gland as a rule is not enlarged, and on simple inspection nothing may be seen. The axillary glands during this early stage are enlarged and may be palpated. As the condition progresses the nodes increase in size, though very slowly, possibly coalesce, become more elastic, and finally impart a sense of fluctuation. They may become adherent to the skin and the contents of the abscess be discharged through a fistulous tract. Occasionally several fistulæ are formed in consequence of the breaking down of many nodes. While ordinarily the gland is not enlarged during the first stage of the disease, later, if pus in any considerable amount is formed, the breast becomes noticeably enlarged. If the process is situated near the posterior surface this may become attached to and quite immovable from the pectoral fascia. The nipple, in a goodly number of cases, is retracted.

DIAGNOSIS.

The diagnosis will depend on the antecedents and appearance of the patient, the history of the case and the physical examination. The antecedents will often show scrofula or tuberculosis. The appearance is often that of a thin, anemic, weakly woman of lessened resistance, while the history may establish the probability of tubercular processes in other parts of the body. The examination will usually disclose, if made before the formation of an abscess, one, more frequently two or three, quite hard, very irregular, well defined, not specially sensitive nodes which are inseparable from the glandular structure. The axillary glands are enlarged—it is stated in two-thirds of the cases—and the nipple often retracted. When pus has formed the use of the hypodermic needle and the microscope will materially aid in establishing the diagnosis. When fistulæ have formed, the process being chronic, the diagnosis is easy. The process must be differentiated from scirrhus, actinomycosis, benign growths and from cysts due to chronic inflammatory processes. In scirrhus the patient is usually more than fifty years of age. The node is single and harder than in tuberculosis. The history of the cases and the cachexia are different. In actinomycosis the thickened, indurated, leathery skin, the yellow granules and the use of the microscope will establish the diagnosis. In benign growths, such as fibroids, the fact that they are usually single and distinctly encapsulated without enlargement of the axillary glands, will be sufficient to distinguish them. Multiple cysts, especially when of small size and due to a chronic inflammatory process, present the greatest difficulties perhaps in the way of diagnosis. Many of these small cysts are not to be differentiated by touch from solid nodes. In these cysts, however, the axillary glands are not usually enlarged, the history of the case is often different, and the use of the hypodermic needle will afford valuable assistance.

I have been able to find scarcely more than a dozen cases reported up to date in the United States, and believing that very many of the cases of chronic mastitis and most of those of chronic abscess of the breast are really tubercular, to say nothing of those cases in which there are distinct nodes running a chronic course, I am forced to the conclusion that in the past there has been in the great majority of cases of tuberculosis of the mammary gland a failure to make a diagnosis.

REPORT OF CASES.

Seven cases of tuberculosis of the mammary gland, all in females, have come under my observation during the past two years. Five of these patients were single. Of the two who were married but one had borne children. In three cases both breasts were affected.

Case 1.—The first patient was 35 years of age and single. She had noticed for a year and a half an enlargement first in the right and then in the left breast. In placing the palm of the hand flat against the gland many small indurations could be felt. These seemed of considerable size when the breast was pinched up between the thumb and fingers. The nodes were hard, irregular and reasonably well defined, but seemed to be a part of the glandular structure. The axillary glands on both sides were implicated. The nipples were not retracted. The patient's condition, aside from this, was reasonably good.

Both breasts and axillary glands were removed. The breasts were found dotted with small circumscribed abscesses, which in some cases were directly connected with the ducts and in which the bacilli of tuberculosis were demonstrated to exist. Patient made a good recovery. In this case there was nothing in the patient's history or antecedents indicative of tuberculosis and there were no other foci anywhere in the body which could be detected.

Case 2.—An unmarried woman, 30 years of age, with a predisposition to tuberculosis, noticed seven months previous to examination, a gradually increasing, hard swelling in the right axilla. Latterly the swelling had occasioned such extreme pain in the right arm that it was scarcely endurable. During the past two months several small, hard, well circumscribed indurations could be felt within the breast structure.

The breast was excised, and with it the major portion of the pectoral muscles. An abscess of considerable size situated in the axilla and adherent to the pectoral muscle was unavoidably broken into. A large number of axillary glands were so intimately adherent to the axillary vein that excision of a portion of the vein was necessary. This was done after double ligation with catgut. The glands and abscess were causing severe pressure on the brachial plexus, some of the smaller branches of which were excised with the abscess. The breast was found on multiple incision to contain a large number of small collections of pus, many of which were not larger than a pea. Some of these were in direct connection with the ducts. The patient had never complained of anything more than an occasional burning pain within the breast.

Patient's family history was as follows: Her father was drowned, mother died of pneumonia at an advanced age, an uncle and a cousin died of consumption. There were three children, all of whom are living. The glands of the axilla showed numerous tubercular bacilli as well as many points of caseation. The process in the breast in this case was evidently secondary to the infection of the axilla.

Case 3.—Mrs. R., aged 40, mother of three children. Very spare in figure, anemic, presents the appearance of one having but slight physical resistance. In her family history a relative of her father was supposed to have died of tubercular peritonitis, while a brother had his leg amputated for tuberculosis of the bone. After the birth of her third child eight years previously she suffered from a mammary abscess, and has been since in poor physical condition. For the past few months the patient had noticed a small, hard lump in the left breast. At the time of the examination there were two very noticeable, quite hard, reasonably well-defined nodes which evidently were inseparable from the glandular structure. One was in the upper and the other in the lower quadrant of the left breast. In the right breast there were also two or three indurations. From one of these, when pressure was made, there was a discharge from the nipple. The nipples were not retracted. The glands in both axilla were enlarged.

The breasts and axillary glands were removed. The pathologic findings showed that the glands were tubercular. The patient, one year after the operation, shows indications of pulmonary disease.

Case 4.—An unmarried woman, aged 31, had been for several years in delicate health in consequence of a chronic uterine and ovarian inflammation. She had worked hard as a nurse and was thin in flesh, debilitated and anemic. Her family history shows the father and mother to be living and well. There is no tuberculosis in the immediate family. A brother of the father and a sister of the mother, however, died of consumption. For four years patient has noticed a gradually-increasing enlargement in the right axilla. For a few months there has been some soreness and hardness in the right breast with slight fever. The axillary glands have caused the patient a good deal of pain. In the breast there is an illy-defined, not well circumscribed induration situated in the upper quadrant. If the breast is picked up between the thumb and fingers there is a marked induration.

The breast and axillary glands were removed. The breast, on incision, showed that the hardened area had undergone caseous degeneration. The axillary glands were found to extend along the vessels filling more or less the axillary space as far as the clavicle, making a section of the pectoral muscles necessary in order to remove them. Many of the axillary glands were in a state of caseous degeneration, and contained bacilli in large numbers. The patient, since the operation, has shown decided improvement, and although at times annoyed by a cough she has gained in flesh and strength.

Case 5.—A single woman, aged 44. Father and mother lived to be old. No tuberculosis in family. Patient had a severe pulmonary hemorrhage twenty years ago and a second one year ago. Both from the right lung. In the right apex there is prolonged expiration with much rattling and a decided dullness. There is considerable cough and some expectoration. The latter contains tubercle bacilli. During the last eight months there has appeared in the left breast, just above the nipple, a mass two inches long by half an inch in thickness. This area is quite hard, and from it several strands pass out to the border of the breast, while two or three run in toward the nipple. The axillary glands are enlarged. Patient, although having some continued fever, looks comparatively well.

Operation was not advised on account of the condition of the lung.

Case 6.—Female, aged 30, of spare figure, is anemic and not strong. Never, however, has suffered any serious illness. Family history good. For several months she has noticed hardened areas in both breasts. The condition has caused a good deal of anxiety and the patient has apparently lost flesh and strength. Has no cough. On examination there are several indistinct and separate hardened areas in each breast. Nipples not retracted. Glands in both axillæ enlarged.

Axillary glands and breasts removed. Sections show hardened areas in the breast and the axillary glands to contain caseous material in which the bacilli of tuberculosis are found.

Case 7.—Female, aged 36. Married nine years; never pregnant. Spare in figure, weak and anemic. Never has been ill. Family history good. She has noticed in the right breast more or less of pain for the past three months, also a swelling, which has gradually increased in size. At the time of examination there was a reasonably soft, fluctuating growth the size of a hen's egg situated in the upper and outer quadrant of the gland.

The mass was only mildly sensitive on examination. There were also several small indurations in the breast. The axillary glands were distinctly enlarged. Patient's temperature was not above 99. In the outer quadrant of the left breast there was also a soft, not well-defined and fluctuating mass as large as a small orange, while directly above the nipple were two hard and not well-defined indurations. Glands in both axillæ were enlarged.

The patient refused to have the breast entirely removed, consequently free excisions were made of the fluctuating masses, these excisions being made to include the indurated areas. In cutting across the ducts many of these were seen to be in intimate relation with the abscess cavities and to contain pus. The pus in both cavities was found on microscopic examination to contain the bacilli of tuberculosis.

Of these seven cases two were secondary to tuberculosis of the axillary glands, while one was secondary to tuberculosis of the lung. Of the six cases operated on five seem to have completely recovered.

TREATMENT.

This will depend largely on the general condition of the patient and the extent of the disease in the breast. If the process in the gland is secondary to a severe and non-curable condition situated elsewhere in the body nothing more than palliation should be practiced. If the infection in the gland is secondary and the primary focus not severe or amenable to treatment, then there should be an effort made to eradicate the infection in the gland. If there be but a single collection of pus without adjacent nodes, indicating but a single focus of infection, the abscess may be incised, washed out thoroughly, curetted and drained. This course has been successfully practiced, and is recommended by Warren. If multiple foci of infection exist, and they are confined to a single quadrant of the breast, this portion may be excised. It is, however, the better practice where dissemination has occurred to excise the entire breast. If the axillary glands are implicated, as they usually are, they should be removed.

CONCLUSIONS.

Tuberculosis of the mammary gland is not an unfrequent condition, but one which goes unrecognized. The process may remain for months, and even years, in the form of hard, irregular, reasonably well circumscribed nodes. Liquefaction and pus formation are secondary and later processes. Tuberculosis of the breast occurs with especial frequency during menstrual life. It occurs with greatest frequency in single women. The condition is more often primary than has been generally supposed. The tubercular infection often implicates both glands nearly simultaneously. Palliative treatment may be practiced when the process is circumscribed. When the processes are diffuse radical measures should be recommended.

DISCUSSION.

Dr. B. B. Davis, Omaha—A case under my observation had a very large tumor and the axillary glands were considerably involved. At one point in the breast there had been a perforation and fistula with a history of considerable material being discharged, which under microscopic examination was demonstrated to contain tubercle bacilli. In the other case, I think I should have erred had I not recently read a very able article by a German operator, in which he discussed in detail the operation. This was in a comparatively young woman, about 30 years of age, if I remember rightly. Although there seemed to be one nodule, it was separate and I found on examination that it consisted of three different nodules, agglutinated and in a state of degeneration. All I did was to excise that portion of the process containing the nodules. There was no enlargement of the axillary glands and the patient recovered. In the other case I did the same kind of an operation that I should have done if the case had been carcinoma of the breast.

Another point is in regard to the temperature. In these tubercular cases which have existed for any considerable length of time we nearly always have some rise of temperature in the evening, and frequently subnormal in the morning, and this was particularly characteristic in the first case I mentioned. I have been under the impression that a good many of these cases in which there is a hard nodule of the breast and the breast is removed, supposedly as a carcinomatous case, are in reality tubercular, and I believe tuberculosis of the mammary glands is a much more common condition than is generally supposed.

Dr. T. J. Sullivan, Chicago—There is no reason why tuberculosis should not be found in the mammary gland, just as it is found in every other portion of the body, and I believe that there is no tissue of the human body that is not liable to be infected. I think we can even go further and recall the statement of some of the authors that the tubercular germs in a greater or lesser number exist in all our bodies and that sooner or later we may, any of us, have it. That being true, we may find the tubercular germs in any portion of the body.

I had a case of this condition occurring in a woman, of average health, mother of ten children, who had always enjoyed good health, and had been compelled to work hard to maintain the family. She had had swelling in the breast, appearing about six months previously, after working hard. Previous to presenting herself to me for examination she had been examined by a physician, who informed her that she had carcinoma. The appearance would indicate that she was suffering from carcinoma. I placed my hand on the breast immediately over the tumor and detected a small, hard nodule. In presenting her to a class of medical men the following diagnosis was made: Retraction of the nipple; hard nodule; no axillary enlargement; healthy and well; no pain.

She was kept under observation for a couple of weeks, at the end of which time the nodule had enlarged slightly. I then was in considerable doubt as to the nature of the tumor and removed a small wedge under local anesthesia. Pathologic examination of this wedge revealed the fact that it was due to an inflammatory process. I then decided to remove the whole breast in a radical operation, including the axillary glands. I did so, and the appearance of the nodule presented to my mind the appearance of scirrhus of the breast.

and a good pathologist who was present at the observation said that undoubtedly it presented all the appearances of scirrhus. The operation was complete, however, without further attack on the axillary glands, and subsequent pathologic examination revealed marked tuberculosis, which healed rapidly.

It is time to call attention to this subject and give these patients the advantage of early operation.

Dr. William Knight, Hartford, Conn.—Just a little criticism of one point in regard to abscess. Dr. Levings said you could open the tumor and drain thoroughly. The tendency in treatment of those cases is to prevent absorption.' It seems to me that it is folly to interfere with it. It also seems to me much better to open it and drain thoroughly with plenty of absorbent cotton. I think we will get much better results by the treatment of abscess in this manner.

Dr. Andrew W. Morton, San Francisco—I have had experience with only one case which puzzled us considerably. We used the tubercular serum to make the diagnosis, and got the characteristic reaction which we usually get in using this serum where there are tubercles. After the removal of the gland the microscopic examination showed the diagnosis to be correct.

Dr. A. H. Levings, Milwaukee—I may add that one additional case has come under my observation since this article was written. Of my cases of tuberculosis of the mammary gland one was secondary to a tubercular process of the lungs while two were secondary to tubercular processes in the axilla. The others, so far as I was able to determine, were primary within the breast itself. In some of these I think the infection was through the milk ducts. In others the infection was through the circulation, arterial or lymphatic. I am very confident that we have been mistaking these cases for carcinoma because the two conditions may present practically the same symptoms, in that there is a hard nodule, retraction of the nipple and enlargement of the axillary glands.

In regard to the treatment of opening and curetting an abscess, I am of the opinion that in a case in which there is but a single abscess with no out-lying nodes, this treatment may be recommended, and probably will, if properly carried out, result in a large number of cures. This, in fact, is the treatment generally which we are accustomed to follow in cases of tubercular abscess.

ABSCESS OF THE SPLEEN.*

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Abscess of the spleen is rare, and when a case falls into our hands and is operated on successfully, it is worthy of record.

About the middle of May, 1901, I was called to see Mr. A., and obtained the following history:

History.—American, age 74 years, weight 211 lbs. Family history: Mother and one sister died of consumption. Father died of some brain trouble. Previous history: Has had two severe falls, the last one two years ago, from which he never fully recovered. Jan. 10, 1901, was seized with a severe attack of influenza, which completely prostrated him. At the end of three weeks the temperature and pulse were normal. He has never lived in a malarial district and has never suffered from typhoid or malarial fever. Since the beginning of his sickness he has constantly lost in weight.

Present Illness.—Patient in bed, anemic, covered with a cold perspiration, very nervous, anorexia, night sweats, slight constipation. Complains of numbness in legs and feet, slight though constant pain in left thorax just above lower border of ribs. At times he is pressed for breath, which appears to be due to his nervous condition.

Physical Examination.—Temperature normal, pulse 100, weight about 175 lbs., heart's action very feeble, slight tenderness on deep pressure under lower border of ribs on left side, reflexes normal. I thought that his condition was due to the severe attack of influenza which he experienced. Gave him strychnin and tonics. The improvement in his condition was marked, so much so that in a few days he was up and downstairs. I did not see him again until May 30, 1901. His physician then stated to me that the patient, while being carried upstairs on his son's back the night before, cried out that something had given way in his left side and that he was very faint. He was immediately put to bed and stimulants administered, to which he at once responded. I saw him the next morning and found his pulse 64, and temperature normal. He was very nervous, had a sallow cachectic look, and had lost a great deal of flesh. He complained of constipation, and of severe pain in left hypochondrium. Some edema of legs and ankles was present. His heart was much stronger. Hard tumor in left side extending above lower border of ribs, tender, no fluctuation, urine negative. I considered the tumor malignant, which diagnosis was coincided in by several physicians. Advised exploratory laparotomy.

Operation.—June 8, 1901. On examination under ether I found a hard, non-fluctuating tumor extending from above the lower border of the ribs downward to the crest of the ilium and inward to the linea alba, smooth, most prominent just below ribs. Incision made over most prominent part of the tumor. Found an enlarged spleen very dark in color, which was bound down by numerous adhesions. The anterior surface was comparatively free. Anterior wall of abscess thick, posterior wall very thin, indicating that it would have soon ruptured, allowing contents to escape into abdominal cavity. Because of the thinness of the wall and the numerous adhesions I considered an attempt at removal dangerous. Walled off with gauze and made an incision into the spleen through which was evacuated two quarts of creamy pus mixed with a little blood and cheesy-looking material. Cavity curetted, washed out and spleen sutured to abdominal wall with chromicized catgut, iodoform gauze drain. Convalescence rapid and uneventful and in five weeks he was up and dressed. On Aug. 2, 1901, he suddenly became unable to swallow. Aphasia and hemiplegia of the right side appeared, and after this he rapidly failed and died Aug. 4. 1901. Unfortunately an autopsy was not obtained.

Report of Dr. C. D. Smith, who made an examination of the pus: "I fail to find tubercle bacilli, yet the presence of calcareous material is strong evidence of that nature of the abscess. It contains a multitude of lymphoid cells, much pus, a few crystals of hematoidin showing that there has been a hemorrhagic area in the organ or an embolus, and a few bits of characteristic yellow elastic tissue and fragments of spleen tissue."

Several cases of abscess of the spleen have been reported in which the pus was sterile, and from the absence of any previous septic condition, and the constant normal temperature, I am inclined to think that it was sterile in this case.

I ought to have made a correct diagnosis, but was led astray by the absence of fever, the slight pain, the rapid emaciation and extreme constipation. A blood count would have been of great assistance. Bessel-Hagen thinks the considerable increase of leucocytes in the blood of the greatest diagnostic significance.

The condition in this case was probably due to an embolus lodging in the splenic vessels which, on account of the slowness of the blood-current in terminal arteries, are peculiarly susceptible to the lodgment of emboli.

SUMMARY OF THE LITERATURE.

In looking over the literature on this subject, I have collected 65 cases, 23 of which occurred after an attack of malaria or typhoid fever, 1 after yellow fever and 3 after appendectomy. The others were ascribed to various causes, such as trauma, disease of heart, sudden chilling of the body after excessive heat, tuberculosis, anthrax, alcoholism and exhaustion. Eight cases in which the etiology was doubtful were probably due to malaria, and in eleven the etiology was unknown. Metastatic abscesses have been reported following osteomyelitis, gunshot wound of the knee and amputations.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

Grand-Moursel reports 57 cases, 20 of which were due to malaria; 9 of them diagnosticated, with 8 recoveries, while 11 were recognized only at autopsy. From this it would seem that more cases occur than we are led to believe, which are not diagnosed either before or after death.

ETIOLOGY AND DIAGNOSIS.

The hyperemia of the spleen during malaria and typhoid renders it particularly susceptible to inflammation and abscess formation. All writers agree that the diagnosis is extremely difficult. The chief diagnostic symptoms are history of infectious disease, pain in left hypochondrium which may radiate to left shoulder, night sweats, anemia, loss of appetite and usually chills. Fever may or may not be present; if present, it is of little significance, as it may be due to the original disease. Occasionally extreme constipation is present, but more often diarrhea. Blood count shows increase of leucocytes (Bessel-Hagen). Tenderness on deep pressure usually present in the beginning of the attack. Fluctuation is of value as a diagnostic sign only in those cases which are palpable under the abdominal wall.

In such diseases as malaria and typhoid, in which there is commonly an increase in the size of the spleen, the increase alone is not symptomatic of abscess formation, but if the increase in dulness is progressive, and, added to this there are one or two or all of the above-named symptoms, it is at least very suggestive of abscess of the spleen.

If an embolus lodges in the spleen, it may be some time before any enlargement is apparent, and, in fact, I think that a small abscess may form in this way, become encapsulated, remain latent for a long time, and then either be absorbed or receive a severe blow or strain, which may cause a rupture of the capsule, after which a rapid increase in size of the spleen becomes apparent, or several abscesses may coalesce, forming one large abscess. I believe that this occurred in the case described above, and that the abscess ruptured into the substance of the spleen at the time he cried out, while his son was carrying him upstairs. From this time on the increase in size was remarkably rapid.

PROGNOSIS.

If recognized and operated on sufficiently early, the prognosis is fairly favorable. If not operated on, the abscess may rupture into a hollow viscus and the pus be evacuated by means of that organ. More often it will rupture into the peritoneal cavity and death ensue. Three cases among the sixty-five reported above recovered after rupture of the abscess, one opened into the cecum, one into the left lung, and one into the left lung and stomach.

Death of the patient can be attributed more often to the debility following such diseases as malaria, typhoid and tuberculosis than to the operation or the abscess itself.

TREATMENT.

This is purely a surgical disease. In a few cases splenectomy has been performed, but in order to do this operation successfully the diagnosis must be made very early in the course of the disease, before adhesions have formed. Bessel-Hagen states that splenectomy for splenic, perisplenic and parasplenic abscess was performed seven times, three up to 1890, four in 1891. The same author reports two cases of splenotomy in which the abscess was reached by resection of a portion of the ninth and tenth ribs. Lauenstein also reports one similar case. In the greater number of cases aspiration was first employed, then later incision through the abdominal wall. Splenectomy is the operation to be preferred, but it is limited to those cases in which adhesions have not formed, and to those in which there is no danger of infecting the peritoneal cavity. By this operation we remove the entire organ and its contents at once, thus giving a clean wound, and a much more rapid and satisfactory convalescence. Until we are able to make an early diagnosis, splenotomy is the operation of necessity, and it should be chosen in those cases in which there is great debility and in those in which the abscess wall is thin.

I do not believe that aspiration is necessary in the majority of cases, and its use should be condemned. We should be able to make the diagnosis without its aid, and it subjects the patient to one more chance of infection.

In the early stages of the disease, when the abscess cavity is small and the spleen has enlarged but little, if at all, it is very doubtful if the aspirating needle would throw any light on the diagnosis. Later, when the spleen has increased in size, and possibly fluctuation is present, its use is unnecessary and dangerous. If, after the exposure of the tumor, it is found to be very large, it is wise to aspirate before making a free incision into the spleen, thus diminishing the danger of infection.

CONCLUSIONS.

1. Abscess of the spleen is rare, but not as rare as we are led to believe.
2. It is most likely to occur after malarial or typhoid fever, because of the hyperemic condition of the spleen in these diseases.
3. Absence of fever does not preclude the possibility of an abscess.
4. Early diagnosis and operation are very essential, and give a fairly favorable prognosis.
5. Splenectomy is the operation of choice, but its application is limited.
6. Preliminary aspiration is an unnecessary procedure, and its use should be condemned.

ACUTE EPIPHYSITIS CAUSING A CONDITION SUBSEQUENTLY SIMULATING CONGENITAL HIP MISPLACEMENT.*

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OMAHA.

The writer uses the word misplacement, instead of dislocation, agreeing with Tubby, who says that dislocation can not properly be applied to a condition where the bone never was in place: the word misplacement seems to be better suited to describe the congenital condition. Epiphysitis does, however, result in a dislocation, and the condition might therefore be properly called pathologic dislocation of the hip, resulting from epiphysitis.

May 12, 1902, a female child of 2 years was referred to me by Dr. McClanahan. It was delicate, but well nourished. Appearances indicated congenital misplacement of the right hip. Indeed, all the conditions were typical of this condition.

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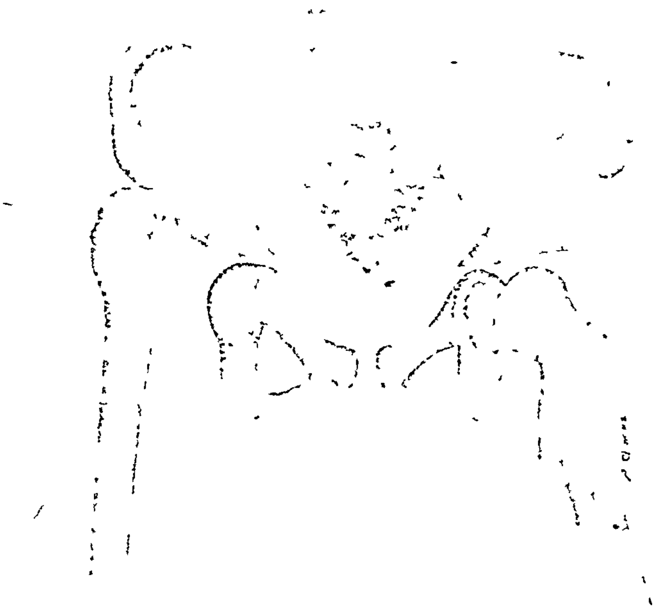
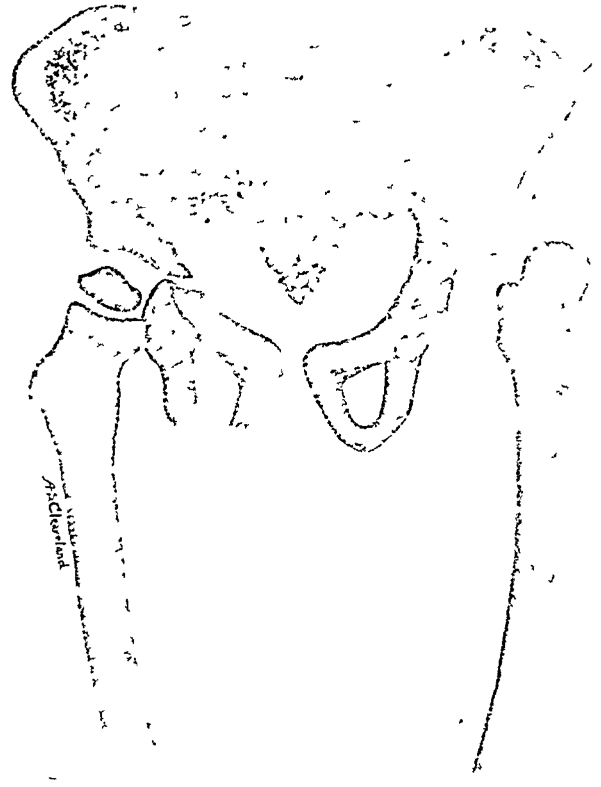
* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

The history, however, disclosed information which placed such a diagnosis in doubt. *At 16 months*, when the child had essayed to walk, she was normal, as far as the parents knew. At this time she suffered a severe attack of lobar pneumonia, from which she was convalescing when she had an abscess over the hip, which was incised. Resolution was speedy, and no trace was left on examination save a small scar one line in width and two lines in length, situated 3 cm. below and 1 cm. internal to the anterior superior spine. This history following pneumonia indicated that the abscess was pneumonococcic. The history elicited from the attending physicians gave evidence of so speedy a resolution that articular or epiphyseal disease could scarcely be credited, though it was suspected. A periarticular suppuration predisposed by a misplaced hip excited by the pneumonococcus, was thought to be a possibility. The history gave no certainty as to the diagnosis of either congenital hip misplacement nor acute epiphysitis. There was now no evidence of hip disease. The limb was freely movable in all directions save abduction, which was somewhat restricted.

As before stated, the deformity was typical of congenital hip misplacement. A radiograph did not give information which would enable the inexperienced observer to make a differential diagnosis, but the writer ventures this observation, based on comparisons with a number of radiographs of congenitally misplaced hips, all of which show a lesser space between the upper extremity of the femur and the pelvis. In fact, it may be said that the head of the bone invariably lies in contact with the ilium. The radiograph of the pathologic dislocation shows unusual distance between the pelvis and the thigh bone. This condition indicates not only absence of the head and neck of the bone, but an amount of soft tissue between the bones, which may explain why our best efforts at reduction are thwarted, except in rare cases.



In an attempt at reduction in this case by the Lorenz bloodless method, nothing could be accomplished. The absence of the head seemed to be strikingly apparent. The bone could not be impinged against the pelvis, as it can in cases for which reduction is ordinarily attempted. I was not satisfied with this attempt, however, neither were the parents, who were solicitous that everything be done to remedy the deformity and the disability. Therefore, the Lorenz-Hoffa cutting operation was done. The incision passed directly through the scar of the old incision, which enabled us to demonstrate the true character of the original trouble, i. e., a healed funnel-shaped depression over the capsular ligament indicated the site of the former sinus through which the destroyed epiphysis had been discharged in the form of pus and débris. A dissection into the former capsule showed this to be a closed cavity, practically a dense ligamentous structure, which precluded an approximation of the trochanters and acetabulum. I use the word trochanters advisedly, because none of the head, and practically none of the neck of the femur was demonstrable. The operation, therefore, was a failure. Literature furnishes abundant information on the occurrence of this condition, but little or nothing on the treatment of the deformity and disability. With the evident advancement in the treatment of hip misplacement, the writer has sought information from some of those who would be likely to avail themselves of anything offering encouragement in the handling of these perplexing cases. Wisner R. Townsend writes:



> I have seen a great many cases and believe they should be treated as excised hips. Where there is no adduction and the upper end of the femur does not slip too much, a high shoe will suffice. If adduction exists I overcome it under ether, and put the limb up in marked abduction.
>
> I have not treated any by the so called Lorenz method, but could only believe it might be of use providing the upper end of the femur could be kept in the acetabular cavity, or in front and below the anterior superior spine, and a new socket thus formed with upper end of femur taking the place of the head, which has disappeared.
>
> That these cases, when seen long after recovery, are very rarely correctly diagnosed is a fact, and I have had a number sent to me on the supposition that they were congenital dislocations.

Royal Whitman says:

> I have performed both the open and the Lorenz method in these cases. The aim is, of course, to fix the femur in, or about, the acetabulum, that is, anterior to it, and to hold the limb finally for a long time in abduction and extension. One hopes thus to attain security.
>
> One can hardly report on final results until many years have elapsed. My cases are still under treatment. Perfect cures are, of course, out of the question.

A letter from Professor Lorenz (whose work I had witnessed two years previously) replying to my letter requesting information along these lines, is of especial interest in this connection, and is as follows:

> The diagnosis can always be made; the treatment can be the same as in cases of congenital hip dislocation, but never a perfect cure can be obtained. An improvement, however, is nearly always possible. Generally the head of the femur is more or less destroyed, sometimes nearly wanting, so that the upper extremity of the femur ends like a broomstick.
>
> The first who called attention to these cases was my late master, Professor Albert. Reduction, as a rule, is scarcely possible; only one time I succeeded. In the other cases (they are rather frequent, these cases of pathological luxation after osteomyelitis or other infectious diseases), I change only the position of the leg, the flexion and adduction of the thigh being changed in an habitual abduction (lyorrhesis abductionem) and hyperextension of the thigh. I call this treatment, which is available also in other cases *die Functions verbesserung defecter Huftgelenke*. The condition for weight bearing is improved, the endurance in walking is augmented, but the limping will never disappear, although it can be lessened, too.

With this additional testimony, the writer would now be disposed to undertake this treatment, indorsed by practically all three of the distinguished authorities quoted, yet he would have reasons to doubt its usefulness in a case such as the one herewith reported. The treatment would seem rather severe to inflict, where so small a prospect of benefit is promised. The limp and disability, always unilateral in the cases, are really not so great as to be a serious handicap. Some years of experience will probably be necessary before the profession can decide fully the merits of intervention.

While the writer, with his limited experience, which was characterized by failure, would not desire to pose as a pessimist, yet it appears to him that the very nature of the anatomico-pathologic conditions present would seem to effectually preclude the possibility of successful treatment in many of these cases. That cases without too much destruction of the femoral head and neck will be improved by the approximation of the bone to the acetabulum, or placing it anterior and maintaining the parts in this position for a long time, as in congenital misplacement, seems not unreasonable, and, in view of the fact that nothing better is offered, should be tried.

That cases of epiphysitis occurring in young infants where the head and neck of the bone are largely cartilaginous and in a condition favorable to be destroyed completely, will leave a condition unfavorable to successful treatment, except as recommended by Townsend, i. e., as excised hips, by an extension sole to lessen the limp, and the inevitable scoliosis resulting from a tilted pelvis, would appear to be about all that can be done in some of these unfortunate cases.

Discussion such as is hoped to be elicited will favor a better understanding, perhaps, and tend to crystallize ideas relating to what now seems to be little understood generally and rarely practiced, save in the practice of a very few orthopedists.

DISCUSSION.

Dr. John Ridlon, Chicago—Some weeks ago Dr. Lord asked me for facts concerning this condition, and I told him that I had no recollection of any case, and, so far as I could ascertain, I had no record of any case that appeared to resemble congenital dislocation of the hip. By one of those curious circumstances two such cases have since come to me: one of them I have operated on and the other is waiting to see the results of the first operation. Both of the cases were in children and were of sudden onset, accompanied with great pain. Neither had had any abscess that was ever recognized or opened, and there were no scars. I was inclined to believe that it was a pneumococcus infection, and I was somewhat surprised at Dr. Lord's statement that his case was one of pneumococcus infection, and that there was an abscess, because I was under the impression that one did not get abscess in the pneumococcus infection. Now in these two cases the edge of the acetabulum was ragged and the greater trochanter was one-half inch or more above the upper border of the acetabulum, and the line of junction to the shaft where the neck had been was ragged. In the first case, a colored child, I found what I thought possibly was the shell of the former head of the bone, it being somewhat of that size and shape. Under an anesthetic I ventured to pull the leg down, so that the greater trochanter would be in the neighborhood of the acetabulum, and force it into the acetabulum, thinking that I might renew the inflammatory condition, and more likely cause the formation of adhesions which might result in permanent fixation. As I did the operation I could hear a crash, as though some partly diseased portion of the bone was being crushed. I could not make out whether it was the acetabulum or the greater trochanter. The patient has not recovered fully from the operation, but there is no pain, sensitiveness or temperature, and the patient appears to be perfectly comfortable.

The other case resembled the first exactly, excepting that the shell of the head was wanting, and there was a transparent area below the greater trochanter, as if the bone had been partly destroyed. I suggested in the second case the same operation as in the first. It seems to me that the only chance of securing satisfactory results is in pulling the greater trochanter down and placing it in contact with the acetabulum, holding it in place by mechanical appliances for many months and then, if necessary, putting on a leather support to hold it in place for many years. I do not think one should fear the inciting of undue inflammation, as it would seem by this inflammation we would get a greater degree of fixation and better results.

Dr. Wisner R. Townsend, New York—This paper, it seems to me, is particularly opportune, for the reason that the country is being scoured for patients with supposed dislocation that some surgeon may reduce a la Lorenz. The first question to be considered is that of diagnosis. If the diagnosis is correctly made the subsequent treatment may be correct. If it is incorrect it is very uncertain what the treatment may do. One point that seems to me of especial importance after the diagnosis, is the future of the child. I have had the misfortune to be able to follow some of these cases for ten or fifteen years, and those which were neglected were far worse off than those which were cared for. To my mind the points of most importance are to keep the thigh abducted and prevent irritation. The cases should be kept under observation for many years. The thigh can be placed in a plaster-of-paris bandage or a leather support or splints, if desired, and much good result. As far as reducing the supposed dislocation by the Lorenz method is concerned, I do not believe that we can accomplish much except by putting the bone in an anterior position. I have never seen a case of congenital dislocation in which you could not feel the head of the bone; sometimes it is very distinct, although deformed. In acute epiphysitis the head is almost entirely absent, and if the history of the previous abscess is secured it is a rather easy diagnosis to make. Without the head of the bone, of course, we can never have as perfect motion as in the normal child, and no method of treatment can restore the head.

Dr. John P. Lord, Omaha—Just a word in regard to the pneumococcus. As I have said, this condition was only suspected because the child had pneumonia. It occurred after the child was convalescing and, of course, a mixed infection might have caused the suppuration and the discharge. The remark made by Dr. Ridlon that pneumococcus infections of the joints do not terminate in abscess would tend to confuse us, if we continued to depend on the presence of the scar for diagnosis. The writer felt somewhat backward about bringing before the Section a subject which was so rare and of so comparatively little general interest, because I find that very few are informed outside of those working in special lines, and even these are undetermined. It is, therefore, very important, as Dr. Townsend suggests, that this matter be discussed at this time, in order that we may get our minds clear on this subject.

THE TREATMENT OF UNCINARIASIS.*

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WASHINGTON, D. C.

The treatment of uncinariasis may be considered under three headings: First, the prophylactic treatment, or that directed toward the prevention of infection by the hook-worm; second, the means used to cause the expulsion of the parasite; third, the treatment of the anemia and debility resulting from the infection.

Prophylaxis is of very great importance, and is a subject which requires careful consideration. It seems probable that infection takes place chiefly through the mouth, either in infected water or food, or through contaminated hands, which carry the parasite to the mouth. Looss, however, has apparently proven that the larvæ may penetrate the skin. A possible entrance through the air passages has also been suggested, but does not seem probable.

A most important fact, and one which greatly simplifies the treatment of uncinariasis, is that there is no increase in the number of parasites in the intestinal tract of the victim. Each hook-worm is taken into the system in the larval state, and then develops into a mature parasite capable of producing eggs which must, however, be passed from the host before they can be hatched. Thus it seems probable that the removal of a sufferer from an infected locality to one free from infection would ultimately result in recovery, if the vitality had not been already too much taxed.

MODE OF INFECTION.

The eggs are deposited in the fecal evacuations, and are, under favorable circumstances, hatched in twenty-four to forty-eight hours. In the larval state they become scattered in water or soil, and are now ready to infect the host who swallows them, or whose skin they penetrate.

Since the primary infecting agents are to be found in the evacuations, the important question seems to be how best to insure their destruction before they become scattered in the surface soil.

Sandwith says "cleanliness alone is required," but this is not enough. Of course, washing the hands before eating would prevent a certain number of infections, but if we remember the possibilities of infection through the drinking water and in the use of raw vegetables, to say nothing of the theory which Looss has proven, of infection through the skin, it can readily be seen that washing the entire body several times a day would not suffice.

The first step, the all-important step, is toward the destruction of the eggs and larvæ. It is well known that the embryos can not live without air. In view of this fact, Sandwith[1] suggested that infected villages should be compelled to dig trench latrines outside the villages, to use the latrines alone, and to cover them daily with earth. Thus the larvæ, deprived of necessary air, would soon die and cease to be dangerous, and as a result the disease would in time be stamped out.

Sandwith would also insure the death of the embryos by exposing the latrines to the sun's heat, as they have been known to live in shaded earth contaminated by feces for more than six months. Giles (quoted by Sandwith) recommends ploughing the infected surroundings of villages, so as to bury the embryos.

Stiles[2] has advocated practically the same thing as has Sandwith for the localities in our southern states where uncinariasis is known to exist. He suggests the use of suitable water-tight receptacles for feces, which should be emptied frequently; that the people should be taught the necessity of making use of these receptacles at all times, instead of defecating at any convenient spot, where the eggs hatch and the larvæ become disseminated through the surface earth.

This education of the people can only be accomplished by the family physician. No matter what care is taken or efforts made to enforce such regulations, the stamping out of this serious disease is going to be a difficult and tedious problem, simply because its occurrence is almost exclusively among the most ignorant of our people. The discharges might be burned or disinfected by chemical agents, but these methods are not practical in the country districts where uncinariasis prevails. To me the use of trench latrines would seem to be the most practical method of disposing of the infected feces, as it would necessitate very little trouble and no expense, items which would naturally appeal strongly to the people.

THE MEANS USED TO CAUSE THE EXPULSION OF THE PARASITE.

As an anthelmintic in uncinariasis thymol has almost entirely displaced all other remedies. (The credit of discovering the cure of ankylostomiasis by thymol seems to be due to Bozzolo, in 1880.—Sandwith.) The most popular method of its administration is as follows: The patient is given a purgative the day before, and is placed on liquid diet. Thymol is then given in 15 to 30 grain doses (1 to 2 grams) for four doses, at intervals of two hours. If the bowels do not move spontaneously in twelve hours after the last dose, a purgative is given. If an alcoholic solution of thymol is used, the majority of the worms are passed in six to eight hours after the first dose. Therefore, the stools passed within this time are the most important to examine for the parasite. If alcohol is not used they are seldom seen earlier than twelve hours after the first dose.

Sandwith has found that 4 grams (ʒi) given in two doses of 2 grams (30 grains) each at 8 and 10 a. m. respectively, are quite as efficient as the use of 6 or 8 grams given in three or four doses at intervals of two hours, and are less likely to cause the symptoms of collapse. He also omits the primary purge as unnecessary and conducive to exhaustion, and gives a dose of sulphate of magnesia or castor oil two hours after the second half of the thymol. It has been found best not to repeat the treatment more frequently than once a week unless there should be some specially urgent reason for a rapid expulsion of the parasites. This method and dosage, I think, will be found most satisfactory.

The fact that thymol is poisonous must not be lost sight of, and the patient should be carefully watched. Some authors have cautioned against the use of alcohol, ether, turpentine, chloroform, oil, glycerin and certain alkaline solutions during the administration of thymol because of its solubility in these media, thereby increasing the danger of rapid absorption and consequent poisoning. Other writers, however, advise the use of alcoholic stimulants, on the ground that the depressing effect of thymol is best combated by this remedy. No less an authority than Sandwith says: "Warned by the death of at least one of my patients immediately after digesting the thymol, I have always administered to feeble men 25 grams of brandy with each 2 grams of thymol, with the happiest results."

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

[1] Observations on 400 Cases of Ankylostomiasis, 1894.

[2] Report on the Prevalence and Geographical Destruction of Hookworm Disease in the United States, 1903.

Stiles and Pfender in 1902 performed a number of experiments on dogs with thymol in various forms. From these experiments Stiles concludes by saying: "I am afraid of the use of alcoholics per os during treatment, and in the case of weak patients I should be more inclined to use a stimulant hypodermically than run the risk of dissolving the thymol too rapidly, or in too great quantity at one time."

Since thymol is the accepted anthelmintic in the treatment of uncinariasis, and as there seemed to be some difference of opinion as to the safety of its use in alcoholic solution, I instituted a short study of its action on dogs. I regret to say that time did not allow of as complete an investigation as I would have wished before the presentation of our conclusions before this Association. I hope, however, that a few facts of value have been determined.

The work has been carried on by E. E. Butterfield, a fourth-year medical student in the Columbian University and pathologic interne at Garfield Hospital, to whom I wish to express my thanks.

EXPERIMENTAL WORK WITH THYMOL.

Thymol was administered in powder, in alcoholic solution, rendered bland by the solution of olive oil, and hypodermically. Space does not allow of a discussion of previous observations upon the physiologic action of thymol; it suffices to say that our results did not agree in all respects with those of other investigators.

Thymol given in dry powder in small doses (2 grams) caused salivation, and later slight diarrhea. No marked or constant effect upon the temperature, pulse or general condition. Large doses (5 to 20 grams) cause profuse salivation, later vomiting, anorexia, disinclination to move unless aroused, diarrhea and slight elevation of temperature (0.5 F. to 1.0 F.), the latter appearing six hours or longer after the dose and lasting from twenty-four to forty-eight hours. Prolonged feeding in ascending doses of 2, 3, 4, 5, 6, 7, 8, 9, 11, 14 and 20 grams during four weeks caused no loss of weight, the weight of the dog on which this experiment was tried having risen from 22 to 26 pounds during the course of treatment. Eleven grams of the dry thymol is, apparently, not a dangerous dose to dogs of 22 pounds or more, if given carefully and after a meal. Four dogs were used in these experiments without a death.

Thymol Given in Alcoholic Solution.—Alarming symptoms immediately following the administration of the alcoholic solution of thymol to dogs, seem to be almost always, if not invariably, due to aspiration of the irritating solution into the lungs. In seven dogs to which an alcoholic solution of from 2 to 10 grams was given an extensive consolidation of lung tissue was the only significant lesion.

If aspiration of the alcoholic solution of thymol occurs the symptoms are immediate. In a few seconds the dog staggers, seems unable to stand, and in a few minutes develops general convulsions with unconsciousness. The temperature falls 1 to 3 F., pulse and respiration become rapid, pupils are widely dilated, and respond sluggishly to light. Convulsions last from five to fifteen minutes after consciousness is regained, the temperature rises slowly, and in from six to twenty-four hours reaches a point 1 to 2 F. above the normal. This elevation persists for a number of days. A persistent cough develops, a fremitus may be felt over the lungs, and râles are heard. If recovery takes place the dog regains his appetite in one or two days, the cough gradually abates and the temperature falls to normal. This occurred in two out of seven cases. In some cases there is persistent cough, elevation of temperature, loss of appetite and emaciation which would probably end fatally if allowed to do so. Three out of seven presented these symptoms, but were killed on the third to the tenth day after dosage, extensive lung lesions being found at the autopsy. Of the remaining two, one died almost immediately, the bulk of the dose having entered the lungs, none being detected in the stomach (the stomach tube had accidentally entered the trachea). The other, though not very sick, was killed four hours later to ascertain the early changes in the gastrointestinal tract.

Of the seven dogs experimented on, two recovered, and at the end of three weeks were apparently well, save for a slight cough; three would probably have died; one died; the remaining dog would undoubtedly have recovered, as the lung lesions were not extreme.

In conclusion it may be said that doses of 2 grams or more in alcoholic solution are unsafe for dogs, owing to a tendency to aspiration pneumonia.

Thymol in Alcoholic Solution Rendered Bland by the Addition of Olive Oil.—To avoid the irritating effect of the alcoholic solution, the drug was dissolved in alcohol, and enough oil added to render the mixture non-irritating, as tested by taste. Four grams were then given successfully to dogs of 16 to 17 pounds, without depression or fall of temperature. Six grams were given to a 17-pound dog, with a resulting fall of 2 degrees of temperature four hours after the dose was given, and lasting for six days, with depression, anorexia, diarrhea with bloody stools, emaciation (8 pounds lost) and coldness of the surface and extremities.

The autopsy, performed six days after the dosage, showed extensive subacute gastrointestinal inflammation with only two pea-sized areas of congestion at the base of the left lung.

Conclusions: Doses of 2 to 4 grams of thymol in alcoholic solution rendered bland with oil are safe for dogs of 17 pounds or more.

Thymol Hypodermically.—One 16-pound dog was given an alcoholic solution hypodermically to determine whether any toxic symptoms would develop from this manner of administration.

Ten c. gm., 0.20 gm., 1.00 gm. and 1.00 gm. repeated were given at intervals of one or two days without any apparent effect, except inflammatory swelling at the site of injection. Autopsy was performed one week after the last dosage. No pathologic lesions were found, except congestion of the lungs, which may have been produced during the process of anesthetization, which, in this case, was attended with considerable difficulty.

Autopsies on Eight Dogs.—Microscopic examination of the viscera of eight of the dogs to which thymol had been administered showed no changes which were not attributable to the local irritative effect of the drug. The liver, spleen, kidneys and heart muscle were normal. The changes in the lungs varied from intra-alveolar hemorrhage to bronchopneumonia in cases where aspiration had occurred. The condition of the stomach and intestines varied from mild congestion to marked inflammation, most intense after the administration of the drug in alcohol and oil; least intense after the dry. The probable reason why the inflammation was not so marked after the administration of the simple alcoholic solution was that it was so irritating that much of it was drawn into the lungs by the violent coughing it caused. In no instance were albumin or casts found in the urine at autopsy.

CONCLUSIONS.

1. The alcoholic solution of thymol is dangerous to dogs, even in small doses, chiefly because of its tendency to produce inflammation of the lungs by aspiration.

2. The alcoholic solution, even when rendered bland by the addition of oil, is dangerous in doses of more than 4 grams to dogs of 16 or 17 pounds, because of its irritative effect upon the gastrointestinal mucous membrane.

3. In dry powder the drug may be given to dogs in large doses without serious results, no depression, no fall of temperature.

4. Gram doses given hypodermically cause only local inflammation.

5. There is probably no danger in giving 2 to 4 grams, followed by 1 to 2 tablespoonfuls of brandy, to an adult human being, if followed in a few hours by a purgative such as castor oil or magnesium sulphate.

6. It is probable that the alcoholic solution obtained in this way would be more efficacious against the parasites, as seems proven by their much earlier appearance in the stools after the use of the alcoholic solution.

THE NUMBER OF DOSES REQUIRED TO EFFECT A CURE.

As to the number of doses of thymol which are usually required to effect a cure, I can not do better than to again quote Sandwith, who says: "In 184 patients I was able to prove the absence of worms by giving at least two, and sometimes more, doses of thymol after the last appearance of the parasite in the stools. The average number of doses required proves to be 2.6. Forty-two men were cured after only one dose, fifty-eight after two, forty-two after three, twenty-five after four, nine after five, and four after six doses of thymol. Two cases required seven attacks, and two others eight."

In my own case, after giving thymol at least nine times in a period of nine weeks in two doses of 2 grams each, separated by two hours, and followed by a purgative, there were found at the autopsy twenty-nine worms in the small intestine. This serves as a warning that in some cases the parasites are extremely difficult to exterminate, and require a prolonged course of treatment. The stools should be examined weekly for eggs, and as long as they are present the thymol treatment should be continued.

As to the resulting anemia and debility, a general tonic treatment with iron and abundance of good food and fresh air are indicated.

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DISCUSSION

ON PAPERS OF DRS. STILES, SMITH AND CLAYTOR.*

Dr. W. G. Harrison, Talladega, Ala.—After hearing Dr. Osler speak on this subject in his wards I felt sure that I saw some cases that were affected with hook-worm disease. When I came home a physician called attention to some suspicious cases at the Deaf, Dumb and Blind School. Several cases were found at the time the state medical association met with us, when Dr. Stiles was our guest. He confirmed the diagnosis in one of the four cases. A microscopic study of the case was not made until the early part of the last week. It was my purpose to treat the case with thymol, but at the suggestion of Dr. Stiles we gave them one or two remedies before resorting to thymol. These children were all in the schools. The youngest was 7 and the oldest only 18 years old. All were extremely anemic. No blood counts were made. Hemoglobin in the lowest was 25 per cent., in the highest 43 per cent. We were careful to make an accurate temperature record. The temperature of each of these patients was not much elevated. In four it was over 100 F., in three between 99.7 and 100 F. In only one was I able to demonstrate the malarial organism, so they could not have been due to latent malaria. In all cases there was a heart murmur, in three a systolic, in four an aortic. In four out of seven cases there was a marked pulsation of the vessels of the neck. It is rather an interesting point that Dr. Stiles himself recognized the disease in whites, but said he was not sufficiently familiar with its characteristics in the negro to recognize it. It was stated that it was likely one of the pupils would be affected with the hook-worm, and many students were examined and hook-worm disease found. Subsequently, in one of the schools, being unable to pick out the likely subjects, I asked the superintendent if there were any who appeared to be especially lazy, or any pupils who would not play, who would not take exercise, or frolic, or run or jump. He answered: "Yes, I have two boys who are so lazy that I can not get them to do anything." I examined those two and found the eggs in both. Three out of the seven cases I examined were among the blind. I saw two cases among the mutes. The peculiarity about the eyes was noticed. I had heard Dr. Welsh speak of the "stare." As soon as we were inside I said: "Doctor, I guess you will find the stare." Subsequently we went through the carpet factory and found in three out of seven cases the stare.

The treatment of these seven cases was as follows: Two were given four grains of calomel every three hours for four doses, and after a couple of days Epsom salts were administered. Twenty-four hours later the worms could be found in the stools. Then, for each patient, for two days, thymol was given in 15-grain doses at intervals of three hours. On the following morning there were found in the stools from 40 to 50 worms. The above was the treatment given in two cases. The third case was given 10 grains of salol every four hours for four days. No worms were found in 24 hours. In two days 10 grains of thymol were administered, and this patient passed 28 worms during the next 24 hours. In case four calomel, grains four, and santonin, grain one, were given every three hours until four doses were given. No worm inside of 24 hours. The next day two doses of 15 grains of thymol were given, and then there were passed between 60 and 70 worms. Case five fasted two days by accident, and this patient passed two worms before any medicine was given. That patient was given 10 grains of salol and 4 grains of calomel and 1 grain of santonin every three hours until four doses were given. This patient then passed 10 or 12 worms. On the succeeding day this patient was given 3 grains of thymol every three hours until three doses were taken, and on the following morning there was found in the stool 27 worms. Case six was given 15 grains of thymol every three hours for two days, and this patient passed a large number of worms, over 250, and probably four times as many more. Case seven had an incomplete record. He passed many worms.

Dr. E. D. Bondurant, Mobile, Ala.—My attention was first directed to the subject under discussion by a fellow practitioner in Mobile, Dr. W. T. Henderson, who told me of three cases which he had seen, and which from the peculiar edema shown he believed to be uncinariasis. The feces from those cases were submitted to me for microscopic examination, and in all of them I found the ova of uncinaria. Since then I have succeeded in interesting a number of my students and other doctors in the study of the disease, and have had a large number of fecal specimens sent to me for diagnostic examination. In this way I have already diagnosed more than fifty cases of uncinariasis in Alabama, chiefly from the counties of Mobile, Monroe, Escambia, Covington and Crenshaw, the greatest prevalence seeming to be in the sandy pine hill country west of the city of Mobile In south Alabama there can be no question that the disease is more common on the sandy land than in the black lands or on dry formations Uncinariasis is surely a very common complaint in our part of the world It is rather a significant fact that in every instance in which uncinariasis has been suspected and fecal matter submitted for microscopic examination, I have been able to demonstrate the presence of hook worm ova

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* The paper of Dr. Stiles appeared in The Journal July 18. The paper of Dr. Smith has not been furnished for publication.

Being a neurologic specialist I have not had very great opportunity of studying the symptomatology and treatment of this disease but during the past four months I have had to deal with uncinariasis as a complication or possibly causative factor in sundry cases of nervous disease These patients, six or seven in all, have shown the anemia, listlessness and general mental and bodily enfeeblement already dwelt on by the authors of the papers under consideration and all of them have been treated with thymol The usual dose has been 60 grains, given in six capsules within two hours' time, preceded by calomel and followed by a saline The results have been favorable without exception numbers of worms being expelled and subsequent rapid improvement shown in the general condition of the patient

Attention should, however, be called to the possible dangers of these large doses of thymol One of my former pupils wrote me that he gave an 8 year old boy 60 grains and came near killing him the child passing into a conditon of coma with spasmodic movements and seeming at the point of death for hours he was cured of uncinariasis however

Regarding the number of worms present, I know of one case in which a patient passed 953, and another instance reported to me by Dr Parker of Crenshaw County, in which over 1 700 worms were counted, and there were more beside"

I have made careful examination of the blood in four cases and in each one found a great diminution in hemoglobin percentage, with comparatively slight reduction in the number of red blood cells

Now that Dr Stiles has overwhelmed us with evidence and shown us how anybody can diagnose uncinariasis, we should not forget that the disease was recognized by Dr Allen J Smith ten years ago, when no one knew much about it, and its frequency was unsuspected

Dr C A Mohr, Mobile, Ala—Unless one has had a case of uncinariasis one can not appreciate the great work accomplished by Smith and Stiles We in Alabama can fully appreciate it, because they have been so plentiful there For a long time we were unacquainted with the disease and were treating for this, that and the other thing, and especially for malarial anemia In fact, the poor little devils have taken iron enough to build battleships, and without any effect on the anemia whatever Only when our attention was drawn to the true nature of the trouble did we get any good results The first case in Mobile was recognized by Dr Henderson and he made a diagnosis from the clinical symptoms only The pulsations in the carotids, the intense anemia, the lowered amount of hemoglobin, the systolic murmur, etc, are all such striking symptoms How the anemia is accounted for I am at a loss to say, I do not know whether it is due to the loss of blood or whether it is produced by the toxemia, or possibly the secretions of the worms themselves It is hard for me to believe from the amount of the anemia which is so intense as in chlorosis and the loss of hemoglobin etc, that it is due to anything so far attempted in the way of an explanation But I am sure that many cases of so called "idiopathic anemia" will be found to be due to some parasitic disease.

Dr G W McCaskey, Fort Wayne, Ind—My experience is limited to but three cases seen in northern Indiana, occurring over one year ago Two cases were in Syrians, and therefore imported, while the other was an American

I wish to emphasize the importance of a routine examination of the feces, not only in hospital cases as advocated by Dr Stiles, but in private practice as well. For several years I have been in the habit of making this routine examination of feces in practically all cases A number of writers think that it would not be necessary to do this, Ewald, Einhorn and others think it is not necessary In 1895 I read a paper advocating this routine examination of the feces, and I have been keeping up such examinations ever since It is not especially unpleasant, less so than sputum examination My principal object in getting up to day is to plead for this routine examination of the feces in all cases of obscure chronic nutritional diseases in which among many other things, important parasitic ova may be found at any time

Dr Claude A Smith, Atlanta, Ga—This disease is not especially confined to the sand belt, it is also found in the mountain regions Through observations that have been carried on in Atlanta and adjacent territory, and especially by examination of students in the Atlanta College of Physicians. and Surgeons and the Southern Dental College, I have traced the disease from the Carolinas to Texas

Almost every country practitioner in the South sees every year any number of cases of anemia, and many of them of the profound type, which are often classed as malarial cachexia, and they have been treating these cases with quinin, iron arsenic, etc, with only slight temporary improvement, and I have found many such to be cases of uncinariasis and the treatment with thymol has given positive results, which were sometimes remarkable

Since we have recognized in the South that this disease is so very common, the point which concerns us most at the present time is by what means does it reach the intestines During my early observations I was inclined to the common belief that it is taken into the body in the drinking water, but later observations led me to the conclusion that the larvæ gain entrance through the skin of the feet, as first pointed out by Bently, producing the ordinary 'ground itch," which is so common in the South in the summer after a period of rainy weather. In fact, I have found that it is possible to locate cases of uncinariasis that you would not otherwise suspect by simply getting the history of the patient in regard to attacks of ground itch and I have found that every person who has had an attack of ground itch within a period of seven or eight years has the uncinaria in his intestines

My first experience with this disease was in December, 1901, when, on making a postmortem examination on a case which had died at the Grady Hospital in Atlanta, I found over 300 of the uncinaria in the small intestine, and on looking up the history of the patient I found that he was from Florida and had never been out of the South As this case was evidently contracted in the South I naturally concluded that it must be endemic, and through the kindness of Dr S H Green I obtained the stools of twenty convicts who work in the damp clay in one of the large brickyards near Atlanta, and of these twenty I found two cases of uncinariasis These cases were reported by me at the session of the American Medical Association at Saratoga last year in the Section on Pathology and Physiology Since that time I have found the disease to be so common as not to be practicable to keep a record of all cases

The reason the full extent of the disease was not recognized sooner was because it is a disease of the country and not of the city, and it abounds under unsanitary conditions

In regard to the systematic examination of the stools of all patients, as mentioned by Dr Stiles, since the first case appeared at the Grady Hospital I have made a systematic examination of the stools of all patients, and during this time have found only three cases in the hospital The rules of the hospital require that all applicants for admission must reside in the city, and this accounts for the small number. As I have mentioned before, you can locate the cases with a fair degree of accuracy by securing a history of the patient with reference to attacks of ground itch within seven or eight years

Dr James B Herrick, Chicago—I wish to call attention to the fact that although this is a disease of the tropics, we in the North should keep our eyes open for imported cases. This last year Dr. Capps of Chicago observed and reported a case that came from Panama, and who reached Chicago after a prolonged stay in the hospital in New Orleans. In this case it is interesting to note the occurrence of 13 per cent. eosinophilia with very marked anemia, the large number of eosinophiles calling attention to the possible existence of an intestinal animal parasite.

Dr. Wm. Britt Burns, Memphis, Tenn.—I would like to refer to two cases which did not show uncinaria. The first case was an engineer who had been in a logging camp, sometimes having occasion to drive teams through lakes of mud. I had examined him a number of times for the malarial parasite, which I found, and thought he had a malarial cachexia. The man came to me in Memphis three months ago. He had fainted and I restored him in my office. He was then placed in the hospital. He had a very marked anemia. He did not remain long enough for me to make a complete blood count. The blood was found to contain the malarial parasite. He had no temperature at that time. The stools did not show uncinaria or other intestinal parasite. This patient had marked symptoms of sleepiness; he slept every time he sat down. He was an engineer at that time and when it was time for him to pull the cord attached to the whistle, on one occasion he raised his hand to pull the cord and went to sleep, and passed the station. He had some diarrhea alternating with constipation, and his bowels would gurgle, as he expressed it. He had some colic. The stools were white. I wished to get him for further examination, but could not.

The second case was a soldier from the Philippines who came to me with diarrhea, and he said that he had had it for some time, possibly a year. He had been in the hospital for six months. Coming on to the pathologic service six weeks ago I made several examinations of his stools. There were no malarial parasites found in the blood. The parasites that I found in the stools were of this character: (Blackboard demonstration.)

I would like to know more regarding the character of the stools in these cases of uncinariasis and of other parasitic diseases of the bowels. I would also like to know the condition of the spleen and liver, the skin and sclera, and also something of the pathology of the mucous lining of the gut, whether there is ulceration or much involvement.

Dr. Charles Wardell Stiles, Washington, D. C.—With regard to ground-itch, I may say that this is exceedingly common in people affected with uncinariasis; but so far as I understand at present it is also found in people who have no hook-worm disease. I am informed by physicians of Georgia and Florida that practically every inhabitant of these states, except persons living in cities, have had ground-itch at one time or another. Undoubtedly uncinariasis infection may take place through the skin, as has been demonstrated experimentally by Looss of Cairo, Egypt. As to infection through the drinking water, I think this is possible, but the chances are that such method of infection is not so common as might be supposed, for the reason that the larvæ of hook-worms sink in water. Infection through cotton, as was suggested in connection with one case, I consider practically excluded on account of the dryness of the cotton.

Length of life of parasite: I have two cases where the parasites have lived six years, and one case six years and seven months, after the patients entered an orphan asylum.

Disinfection: I consider chemical disinfection of premises impractical. Yards may, however, be disinfected with fire, either by spraying burning oil or by scattering straw around and setting it on fire.

Number of parasites present: Dr. Harrison's case, which passed over 1,700 worms, is interesting, and so far as I know now holds the world's record. Ashford sent me about 1,400 worms from one case in Porto Rico.

Classification of the parasite: Dr. Smith has spoken of the validity of the American species. My studies on the anatomy of hook-worms have been interrupted, but it is now easy to foresee that the old genus *Uncinaria* will have to be subdivided. Worms like *Anchylostoma duodenale* and *A. caninum* form a distinct group characterized by the presence of recurred hooks in the mouth; these parasites should be classified in the genus *Anchylostoma*. The worms without buccal hooks, but provided with buccal lips, belong at present in the genus *Uncinaria*, but these forms may be divided into several subgenera, at least, which may eventually be given the rank of genera. The typical subgenus is *Uncinaria*, with *U. vulpis* as a type. Species with non-symmetrical bursa and with prominent buccal tooth, like *Uncinaria radiata* of cattle and *U. trigonocephala* of sheep, may be placed in Railliet's (1902) *Bunostomum*. *Monodontus* (Molin), 1861, should be based on *M. semicircularis*, and apparently presents, according to Molin, a symmetrical bursa with dorso-median ray of the usual type. *Uncinaria americana* seems to take a very isolated position, with its buccal capsule more or less similar to that of *Bunostomum*, but with a symmetrical bursa in which the dorso-median ray is of a very aberrant type. I believe we are justified in recognizing for this species a distinct subgenus (for which I would suggest the name *Necator*—a murderer), which may eventually be raised to generic rank. *Uncinara lucasi* is still different in certain characters, notably of the anterior end, and will probably call for the erection of a new subgenus. *Agriostomum* and *Characostomum* (Railliet), 1902, will probably stand as distinct genera.

The anemia: I agree with the view that it is difficult to explain the severe anemia and the nervous symptoms by the mere extraction of blood. In all probability the cervical glands of the parasites produce a poison which could be readily absorbed by the wounded mucosa of the intestine.

Diagnosis: As to the unpleasantness of a fecal examination, I frankly admit that I would much rather examine the feces than the sputum of a tuberculous patient.

Topography: I do not recall ever having stated that hook-worm disease is confined to sandy soils. What I claim is, that it is pre-eminently a disease of sandy regions.

Color of stools: The color of hook-worm stools is frequently a peculiar reddish brown, a quite different shade from anything I recall in connection with feces I have examined in Washington. Still, this color is not constant even in very severe infections. Nor is the blotting-paper test constant; in fact, it should never be relied on to the exclusion of the microscopic examination, for the chance of error is too great. I suggest the test simply as a convenient confirmatory test in severe cases for physicians in the infected district who are unable to make the microscopic examination. Blood in the stools is by no means constant. It does, however, occur.

Dr. Allen J. Smith, Galveston, Texas—It should be kept in mind, in comparing the group of cases which I have presented with the types of cases which have been mentioned in this discussion, that these instances represented a mild form, presented but few symptoms and were found in the course of a routine examination of a large group of persons undertaken because in some one or more of these persons it was certain the parasite existed. In the first and second of these cases the presence of an eosinophilia, found when searching for the malarial hematozoön, suggested the investigation of the stools for the uncinaria known to be present somewhere in the general group of students; and naturally the success of the search in these two early cases led to the thought of the value of the symptom as at least of suggestive force. In those cases of which I have records of the differential leucocyte count the proportion of eosinophiles ranges from 6 to 23 per cent.

There can be little if any doubt of the fact that one mode of acquirement involves the penetration by the embryonic worms in dirty water or in the mud adhering to dirty objects through the skin and tissues to their ultimate place of abode in the alimentary canal; while it is quite probable, too, that in many cases the entrance to the intestine is direct from drinking unclean water or eating dirty vegetables moist with damp earth. I do not feel that Dr. Stiles' view of the improbability of their transference by cistern water has included conditions which commonly prevail in the frequent over-ground cisterns found in many southern localities. There is easy chance for entrance of the ova to such cisterns by their being blown with sand and dust to the house-tops, whence they may be washed by succeeding rains into the cistern. Sinking to the bottom of such receptacle they usually find what seems to me to be a not unsuitable surrounding for their incubation, providing they have retained their vitality, in the layer of sand or mud, mixed as it often is with charcoal commonly introduced into cisterns with a view of purification of the water; and as the faucets of these cisterns are placed close to the bottom it seems possible that the embryonic worms may be drained with the water used for drinking purposes or otherwise.

I also wish to lay some stress on the relationship which I believe may exist between this parasite and malaria. In six of the eight cases which I have mentioned there is a history of malarial complication, temporarily influenced by quinin, but invariably recurring after longer or shorter intervals. In several of these cases the demonstration of the malarial organism was unquestionable, but invariably was made only after repeated search and with more or less difficulty. While these malarial outbreaks were temporarily restrained by the administration of quinin, during the period of prevalence of the hook-worm in the intestine the malarial recurrences persisted indefinitely, the use of the quinin producing no permanent effect. All this ceased after the parasites were removed from the intestine, subsequent administration of quinin being promptly and permanently followed by the disappearance of the malarial symptoms. It might be suggested that in an indirect way the intestinal parasites have an influence in bringing about a persistence of the malarial infection—probably by lowering the natural powers of the system of the host in reaction and antagonism to some small residuum of the malarial infection after partial destruction by quinin, so that subsequently that residuum more surely may increase to a degree capable of producing the recurrence noted in such cases. With the removal of the worms there would seem to return the natural resistive influence of the body, and this joined with the potency of the quinin leads to complete and permanent destruction of the malarial infection. Doubtless there are other explanations possible for what in my experience is a very real relation of the character mentioned; but the idea suggested does not seem improbable. In such cases of an apparently malarial infection, with few organisms ordinarily recognizable, and these often missed, and with an irregularly recurrent type persisting after the use of quinin (although the latter may have been temporarily beneficial), I would urge that investigation be made for a possible complication by uncinariasis. If the latter be recognized I am confident that the experience I have mentioned may be repeated, and that by first removing the intestinal parasites it will be found that a difficult and persistent malaria will become readily amenable to the ordinary administration of quinin. It adds but little difficulty to the labor of diagnosis. The hook-worm egg is one of the most easily detected of microscopic objects in the fecal material; there is no complicated technic required in the examination of the material, and probably five minutes' attention as an average will suffice for the added work.

The relation between hook-worm diseases in man and in the dog is an item in which I am satisfied that I have publicly expressed mistaken ideas. In the discussion of this matter in 1901 before the Texas State Medical Association, I commented on the similarity of our human uncinaria and the dog hook-worm, and I expressed some question as to a possibility of identity as well as a possibility of the dog being an agent in scattering the parasites where man might acquire them. From the work of others as well as from the clear differences I have since learned to recognize between these parasites I fully realize the mistake into which my ignorance then led me.

I am satisfied, too, of another mistaken suggestion I made at the same time, namely, of the possibility of incubation of the eggs in the intestine of an original host, and thus a chance of permitting a slight infection to increase to a serious degree and to make itself permanent. While I am unable as yet to entirely set this idea aside as an occasional possibility, there is no doubt in my mind that it is essentially always untrue. That it is not impossible I would infer from the fact that occasionally the ova in very fresh feces are found to contain well-formed embryonic worms; and that rarely even in the ova within a gravid female worm an embryo may be found. Of course, too, the segmentation seen in the ova ordinarily is evidence of some procedure of incubation; and should the egg happen to be retained unduly in some groove or in a mass of mucus adherent to the mucous membrane of the intestine, it might on rare occasions develop into the freed embryonic worm. It is impossible for me to indicate why this does not ordinarily take place. I have noted in the incubation of ova in the fecal material that the process has proceeded more quickly and certainly at the ordinary room temperature than in the incubator at body temperature; and although there are probably other factors than mere temperature at work in this connection, it may be one element in restraining incubation in the intestine.

Dr. Thomas A. Claytor, Washington, D. C.—Regarding the elevation of temperature in these cases, it has been claimed that fever is unusual. I think, however, that this depends on the degree of anemia. In intense anemia, no matter from what cause, moderate fever of an irregular type is frequently seen.

Several of the gentlemen have spoken of symptoms by which they could diagnose uncinariasis—such as paleness of the skin, hemic murmurs, pulsation of the vessels of the neck, etc., which mean nothing but anemia, and hence are only suggestive. Without examination of the stools I do not believe a positive diagnosis can be made. It is an easy matter today to have such examinations made.

Regarding the dose of thymol to be administered, it is from 30 to 60 grains (2 to 4 grams). Sandwith, who has had a very large experience in the use of this drug, gives 30 grains at 8 o'clock, 30 at 10 and after two hours a purgative. In weak individuals he gives an ounce of brandy for every 30 grains of thymol.

It has been said that the American hook-worm is more readily gotten rid of than the old-world variety, because of the absence of hooklets in the former. In a case which I have reported two months' treatment with thymol failed to entirely free the sufferer from the parasites, though they were of the American variety.

The weekly treatment with thymol should be continued until the eggs disappear from the evacuations.

The Danger of Corrosive Sublimate Solution as a Vaginal Douche.—It is strange that at the present time many medical men are found who continue to use corrosive solution for purposes of postpartum douching in spite of the clear demonstrations that have been made of its unsuitability and of its dangers, and in spite of the introduction of many safe and efficient substitutes. The use of this dangerous poison for postpartum douching is not alone confined to general practitioners, but it is used and recommended by many competent specialists. A case is recorded in an American contemporary in which a patient, aged 33, who had miscarried at the fourth month, was given a single vaginal douche consisting of a quart of 1 in 1,000 corrosive sublimate solution. The next day she exhibited all the characteristic symptoms of sublimate poisoning—gingivitis, salivation, and diarrhea, the symptoms became rapidly worse, and she died a fortnight later. Of course, an antiseptic can not be condemned because it is carelessly used with fatal consequences in a single case, and, if corrosive sublimate had anything to very strongly recommend it, it would be foolish to do so, but what are its recommendations? It destroys metal instruments; it is a most dangerous lotion to leave about a house; it is decomposed and rendered useless in the presence of much albumin; it roughens the hands of the operator, and constringes the mucous membrane of the vagina and vulva, and so tends to encourage the occurrence of lacerations of these parts; and, as the case to which we have called attention shows, and as many other reported cases show, its use is by no means free from danger. The obstetrician who uses it himself is courageous, but the obstetrician who recommends it for general use to others—nurses or students—is foolhardy.—*Medical Press.*

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SOLUBLE TOXIC SUBSTANCES IN AUTOLYTIC DISINTEGRATION PRODUCTS OF TYPHOID AND DYSENTERY BACILLI.

Up to the present time investigators have been able to isolate by filtration only toxins which go into solution in our liquid culture media. The best known examples of this are the diphtheria and the tetanus toxins. It has been to a degree disappointing that similar toxins could not be obtained from the typhoid, cholera and other organisms, as the possession of such toxins might make possible the preparation of antisera, to be used in the treatment of the diseases in question.

Recent work by Conradi, also by Neisser and Shiga, seems to indicate that some advance has been made in this direction. Conradi had previously observed that when certain organs (e. g., liver) undergo aseptic autolysis or self-digestion, through the agency of preformed intracellular ferments, substances were produced which hindered or prevented the clotting of blood *in vitro.* The same occurred in autolysis of yeast cells; and, furthermore, in both instances the end-product was bactericidal. These results led him and Drigalski to study the effects of autolysis of the dysentery bacillus cultivated from cases occurring among the German troops. The following method was used: An alkaline medium, consisting of 3 per cent. beef-water agar, to which 1 per cent. tropon was added, was solidified in large plates, and the surface inoculated with the bacillus. The plates were incubated for twenty hours at 37 C., the bacteria scraped off and put into tubes. A small amount of salt solution was then added and the tubes kept at 37.5 C. for twenty-four to forty-eight hours for autolysis to occur. The overlying slightly yellowish fluid was then drawn off after centrifugalization, five volumes of 0.85 per cent. salt solution added and then filtered through a Berkefeld candle. Subsequently, the filtrate was evaporated to one-tenth to one-fiftieth of the original volume. This constitutes a water-soluble toxin of which 0.1 c.c. kills a rabbit of two to three kilograms when injected intravenously. In the case of the dysentery toxin it is stated that at the autopsy the intestinal mucous membrane is congested and even ulcerated, showing a predilection of the toxin for this structure. A toxin of similar virulence was obtained from the typhoid bacillus by the same technic. It was found that prolonging the stage of autolysis to more than forty-eight hours gave a weaker toxin. The technic used by Neisser and Shiga was similar. They worked particularly with the typhoid bacillus. In addition to studying the toxicity of their product they directed their attention to its content of bacterial receptors. It developed that the filtrate had the power of binding agglutinin to a marked degree, and, furthermore, that by immunizing with it a serum was obtained which was highly agglutinating, and also bactericidal for the typhoid bacillus. A higher bactericidal power was obtained in this way than usually can be realized by immunization with the bacteria themselves. This proves satisfactorily that free receptors for agglutinin and the bactericidal antibody were present in the autolytic product.

The experiments of Neisser and Shiga, so far as reported, do not indicate that a true toxin was produced. The word toxin, as now applied to bacterial products, has a definite and exclusive meaning, referring to poisonous products of bacterial life, by immunization, with which a demonstrable antitoxin is formed. The antibody formed by immunization with the filtered autolytic product was a bacteriolytic one—an amboceptor, while antitoxin is a uniceptor. It does not appear from this work that a body corresponding in structure to other known bacterial toxins was found. Further study may show that such a toxin is present.

This work serves to emphasize the fact that bacterial life in the body may not be parallel with that in culture media. It is probable that bacterial disintegration goes on at a rapid rate, and continuously in the body in such diseases as typhoid and cholera, setting free large amounts of toxic substances, while under ordinary cultural conditions this takes place to a limited degree. In justice to the French, especially Metschnikoff and his followers, it may be stated that they have long claimed that strong, soluble toxic substances could be obtained from the cholera and to a less degree from the typhoid organism. There appears to be a distinct field for research in this direction.

IS HYDROPHOBIA A PROTOZOIC DISEASE?

The causative agent of hydrophobia has been sought for most thoroughly, but, so far, probably in vain. It was the fruitlessness of his search for the organism of hydrophobia that led Pasteur to suggest that it might be due to an organism too small to be seen, even with the highest and best microscopes. It is generally stated, however, that the cause of hydrophobia does not pass through ordinary bacteria-proof filters which permit the ultramicroscopic viruses of several other diseases of unknown etiology to go through. Whether the non-filterability of the virus of hydrophobia is due to the large size of the elements to form union with animal cells, or to other causes, can not now be stated.

In these days, when discoveries of protozoan organisms in diseases of unknown etiology are made with startling frequency; when, if everything claimed comes true, the causes of smallpox, of vaccinia, of yellow fever, and of dengue (to say nothing of cancer) have just been discovered, it is not at all surprising to read that a peculiar "protozoan organism" has been found to occur constantly in the nervous system of hydrophobic animals, especially dogs and rabbits. This announcement is made by Negri,[1] an assistant to Golgi in the laboratory for general pathology and histology in the University of Pavia. The appearances on which Negri bases his claims are easily brought out by ordinary staining methods in material fixed according to current histologic procedures. Hence his results are easily controllable. The "parasites" occur in the protoplasm of the larger nerve cells: in Ammon's horn, the cerebellum, the cerebral cortex, etc. They are of varying size and form, the interior containing smaller bodies, sometimes to the number of twenty or thirty. Negri regards these latter appearances as the result of reproductive processes, and declares, without hesitation, that he is dealing with living, "organized" formations, the probable cause of hydrophobia. He finds these "organisms" in the central nervous system of rabic dogs and rabbits, no matter the exact mode of infection. In the rabbit the "organisms" are smaller than in the dog; they make their appearance in the cells about the thirteenth or fourteenth day after inoculation; that is, shortly before the manifestations of the earliest symptoms. He has found these bodies in one case of human rabies. The investigations, so far, seem to limit the occurrence of such bodies as he describes to hydrophobia.

Are the bodies described by Negri protozoa? This question can not be answered positively, but it is unquestionably possible for degenerative and other changes in cells to produce structures that morphologically resemble certain stages in the complicated development of protozoa. This being the case, which no one will deny, we must seek for other evidence of the protozoan nature of structures like those described here than is found in a more or less superficial resemblance to protozoa. But such evidence is not forthcoming. Anything like complete developmental cycles has not been described. It has not been shown that the bodies studied are really living, independent, multiplying organisms. They have not been cultivated artificially, and a vast amount of work remains to be done before any definite opinion is permissible. Let us hope that the general appeal now being made to protozoa to shoulder the responsibility for causing so many destructive diseases whose etiology, so far, has escaped search, may not prove altogether in vain.

RESPONSIBILITIES AND DUTIES OF HOSPITAL PHYSICIANS AND SURGEONS.

The increase of smaller hospitals, strikingly shown by the number and variety of official connections still occasionally attached to the name of a more or less prominent physician or surgeon, has been commented on frequently in these columns. The layman of intelligence is rapidly acquiring a taste for the environment and order pervading a hospital. Birth of these smaller institutions is by no means confined to the large metropolis; individual or corporate enterprise has foreseen their need in many obscure but thriving communities. For the care of the ill and injured in this manner, resident and attending staffs have multiplied, considered in the aggregate, to an extent realized by few persons. One pleasing consequence of this is that post-graduate hospital training is accessible to many more than heretofore.

No uniformity of procedure or government of the medical forces of this great class of minor institutions exists, scattered as they are among divers religious denominations, mines, railroads and large manufactories, or organized with capital invested for direct or indirect profit. The responsibility to the public for their conduct is at times assumed by a single member of the profession; sometimes it is undertaken by a wealthy industry, or it may rest with some sectarian or educational organization. No doubt the average attending physician and surgeon feels that the essential duty of his hospital connection is the immediate amelioration of human suffering; another duty of great importance, but as yet only insufficiently fulfilled, is the training of younger men.

The service of internes in some hospitals is too long, the number receiving such training thereby being limited. In many hospitals the service is not a graduated one; in others the training is narrowed to certain branches of medicine. In a large number the amount of labor and the few to perform it precludes anything except sordid drudgery. It is well known that the responsibility for evils of this kind in hospital management and the power to amend them rest with the medical board or attending staff, yet the absence of any coordinate effort to correct these is as noticeable in numerous conspicuous instances as is the failure of conjoint action in other matters awaiting organized action. Commensurate with this failure is the absence of anything like general effort to properly instruct their subordinates and to form little centers for the diffusion of knowledge.

The mechanical nature of the duties of internes in some hospitals might excite the suspicion that the surgeons or physicians do not desire to transmit to others the facility of diagnosis and skillful technic to which they owe some eminence. The need of completing a large number of operations in a given period or of seeing many patients hurriedly not only excludes opportunity for instruction, but is conducive to an irascibility of temperament, rendering the labor of others purely perfunctory. The young graduate is left to acquire or "absorb" what knowledge he may; certain methods of address and mannerisms of dealing with the laity, serving poorly for the subsequent attainment of a lucrative practice, may be acquired as well.

It is emphatically an error to suppose that the entire duty to the recent graduate is discharged by affording him opportunities of contact and association with leaders in medicine. The obligations of instruction and precept, of delicate hint and question, and, best of all, of example, are but poorly realized and inadequately met in many hospitals. The culpability of such defects is enhanced many times by the realization that conditions do not exist where medicine, in the broadest sense, can be taught as well as at the bedside and operating table. To such failures of attending-men as individuals are attributable the poorly constructed and incomplete records, and the entire absence in many hospitals of any progressive spirit of scientific inquiry in the "house staff." Clinical instruction in small classes is as acceptable to recent graduates as to undergraduates; its retroaction would be wholesome for many.

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[1] Zeitschr. f. Hyg. u. Infektionskr., 1903, xliv, 507-528.

That some men have realized such opportunities is shown by the detailed examinations and careful clinical records; by the rapidity with which intelligence of their arrival is spread through the hospital; by the reverence for and retention of their teaching, and by the loyalty they enjoy from the constantly increasing number completing service under their enlightened supervision. It will be denied by no one that there is room for improvement in the directions indicated in the foregoing, improvement as applicable to the small as to the large institutions.

THE INFLUENCE OF THE DWELLING IN THE DEVELOPMENT OF TUBERCULOSIS.

While the rich are not immune, and do not escape its ravages, tuberculosis is, in a large measure, a disease of the poor, and this is so because with the rich there is generally intelligence and a knowledge of hygienic measures and the means to provide them, while with the poor the usual accompaniments are too often ignorance, indifference and neglect, together with all of the other disadvantages that attend poverty. This fact has been established statistically wherever it has been investigated, and the studies, particularly of Flick in Philadelphia and later of Biggs in New York, have shown conclusively that there are certain districts in large cities and certain houses in those districts in which tuberculosis occurs for many years with almost uninterrupted continuity. An interesting inquiry on similar lines has recently been conducted by Professor Romberg and Dr. Gaedicke for the city of Marburg, and the results are recorded in the *Deutsches Archiv für Klinische Medicin,* 76 B., 4 u. 5. H., p. 309. An analysis of the figure shows that while among the 18,000 inhabitants of the city 197 (1.1 per cent.) were victims of pulmonary tuberculosis, about four-fifths of the cases occurred in the poorest fifth of the population. The percentage of cases was 4.7 per cent. in the poorest fifth, as against 0.2 per cent. among the better class. The lesson to be learned from this fact is that measures for the eradication of the disease must be directed to the poorer class. It was further found that 34 per cent. of all of the cases occurred in 2.6 per cent. of the entire 1,503 dwellings in the city, while 59.2 per cent. of all of the cases among poor occurred in 33.6 per cent. of the houses occupied by them. No definite relation could be discovered to exist between the situation, mode of construction and number of occupants of the houses and the frequency of the disease. While filth alone was not responsible for the presence of the disease, the latter was not found in clean dwellings. Nothing could be established as to the individual predisposition of the occupants. The cases in children and a study of individual cases would seem to lead to the conclusion that in a large proportion the disease must be referred to infectious influences. It has been shown that a single inoculation with tuberculosis is often followed by no evidence of disease. Repeated inhalation of tubercle-bacilli, however, through association in a filthy dwelling with a person or with persons careless with respect to cough and expectoration, is a most important etiologic factor. For this reason pulmonary tuberculosis must be looked on as a house disease, especially among the poor, and accordingly the best results in prophylaxis are to be looked for as a result of measures directed to preventing the spread of the infection through this channel.

But it is not altogether architecture that is responsible for the greatly excessive incidence of the tuberculosis among the poor. There are other causes from which they suffer far more than do those who are above them in worldly means. Among these are alcoholism, ignorance of hygiene, as already intimated, as well as their inability to mend matters in their defective dwellings with their proletarian tendencies, even if they had the knowledge and the will.

We talk much about the housing of the poor, but it is a fact also that the housing of the moderately well to do needs a consideration that it does not adequately receive. Many of the moderately high-priced flat buildings in our crowded centers of population are structurally, so far as fresh air and light are concerned, positive temptations to disease. That they are not more fatal is due in part to the fact that children are to a large extent excluded in their tenantry, and they are, therefore, less crowded. In either way, however, they are direct factors in the present problem of race suicide.

CLASSICAL APHASIA.

One of the Emerson anecdotes that came out during the recent celebration of the hundredth anniversary of the Concord philosopher's birthday, seems to deserve a place in the memory of American medical men, because it is such a striking illustration of aphasia. Emerson, who had been the greatest master of words in his generation, lost the power of speech as the result of a brain lesion, though he retained much of his power to think with the vigor and distinction of earlier days. A contributor to the June *Atlantic* illustrates his aphasic condition by retelling the story Emerson told of a carriage ride during which it rained. "After a while the—the—the—the—How do you call what stores up water till it is suddenly—suddenly—what shall I say? Not squeezed out?" "A sponge?" his hearer suggested. "No, no," with the sweetest of smiles and a sweeping motion of the hand up to the sky. "The clouds, perhaps?" was the next suggestion. "Yes, the clouds began to roll up and threaten rain. I had forgotten to take with me my—my—my—By the way, what is it that people always borrow and never return?" "Umbrella?" was suggested. "Yes, umbrella," and so on with other lacunæ in the conversation. The contributor notes: "While, as everybody recognizes, the inmost philosophical essence of the umbrella was thus intellectually grasped, the mere empirical designation of its silk, stick and whalebone would not turn up." The story illustrates very well the merely mechanical hindrance that aphasia is to the expression of thought, though in severe forms it may apparently deprive even a vigorously thinking mind of much of its capacity for properly expressing itself. It is this very feature which constitutes the essence of aphasia. Yet this is often supposed to indicate, even by the medical man, that there must be some impairment of the mental processes behind, not seldom to the perversion of justice in the making of wills and the regulation of business affairs.

IS MEDICINE ATTRACTIVE TO SCHOLARLY MEN?

Professor Thorndyke,[1] of Columbia University, New York, has traced the careers of 5,283 college graduates (1840-1900) who were elected to the Phi Beta Kappa, membership in which is a recognized mark of scholarship. The object in doing this was to learn whether any given profession is gaining or losing in attractiveness to the type of men represented by membership in this fraternity. In the first place Professor Thorndyke finds that there is a remarkable uniformity in the percentage of Phi Beta Kappa men entering the leading professions, namely, from 64 to 68 per cent. for 1840-1900. But the percentages entering the various professions have been far from constant; thus the number taking up law was nearly twice as large in 1890-1894 as in 1840-1860. There has been considerable variation, too, in the number that have taken up teaching as a profession. The Phi Beta Kappa man was "three times as likely to become a clergyman in the middle of the century as he is to-day." The ministry has lost steadily in its attractiveness to this kind of man, and this loss has been quite uniform throughout the country. It is interesting to note that Professor Thorndyke's statistics show that medicine has not been a popular profession with what he calls scholarly graduates. From 1840-1885 the percentage ran from 8 to 4; from 1885 to 1894 7.5 and 7 per cent. entered medicine. He suggests that the gain after 1885 is due to the advance of medicine to the dignity of a science, and to the introduction into the colleges of elective courses in science. Professor Thorndyke's forecast of the future is as follows: "The future will probably witness a steady gain in medicine, a slight gain in teaching, a rapid but unstable gain in law, and a continued decline in the ministry." At the present time law and teaching get the lion's share of the scholarship of the country, as represented by the careers chosen by the members of Phi Beta Kappa. We believe that the indications point to a steady increase in the number of scholarly men choosing medicine for the field of their life-work. The opportunities for research, specialization and beneficent activities certainly can not but draw to medicine increasing numbers of high-minded college students. The inherent attractiveness of medicine because of the altruistic nature of its functions will be reinforced markedly henceforth by the rapidly growing opportunities to study medicine under propitious conditions, and by the favorable attention it is now receiving at the hands of our best universities on the one side, and of our wealthy philanthropists on the other.

FURTHER OBSERVATIONS IN REGARD TO RADIUM.

The possibilities of such mysterious forces as those possessed by radium present an attractive field of speculation for the physician. May not the radiant energy emitted by radium possess pathogenic as well as curative, destructive as well as stimulating, powers on cells and cellular processes? Perchance, it may be forces of this kind that upset physiologic laws of cellular activity, and lead to abnormal proliferations of various kinds? But questions of this kind are not yet ripe for discussion. Actual experimental studies must furnish the necessary basis of facts from which it may be permitted to draw further deductions. Danysz[1] found that radium destroys the skin of guinea-pigs and rabbits, but subcutaneous and muscular tissue do not seem so sensitive as skin. The nervous tissue is also sensitive to its action. A sealed glass tube with salts of radium placed against the skin over the spine is followed by death in young animals. In older animals the osseous tissue seems to protect the spinal cord against the radiations. The effects of rays of radium on bacteria have not been studied extensively as yet, but both Danysz and Bohn show that various larvæ and embryos are profoundly modified in their growth, many being killed when subjected to the radiations; others developing into monstrosities because of unequal stimulation. Bohn further finds that radium exercises an especially intense action on tissues or cells in proliferation; non-fertilized eggs may undergo more or less parthenogenetic development and give rise to atypical formations. It has been found, too, that in animals whose skin was burned by the rays, the hair, in some cases, appeared to be forced into rapid growth. It seems that various effects are obtainable, depending on the tissue or cell exposed, as well as on the quantity and quality of the rays. Further experiments, no doubt, will yield even more interesting and conclusive results. We have commented on the announcement that in Vienna cancer has been cured by means of radium. In this particular direction much work will surely be done, and we may expect interesting developments.

THE VALUE OF EXPERIMENTAL STUDY OF TRANSPLANTABLE TUMORS.

The study of malignant tumors by the usual methods hitherto in vogue has not yielded many results of fundamental importance. A serious drawback to this study is encountered in the non-inoculability of human tumors in animals. The occurrence in certain animals of transplantable tumors furnishes the investigator with welcome opportunities to institute various lines of experimentation looking, for instance, to the production of immunizing and curative substances. Thus Jensen[2] of

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[1] Century Magazine, May, 1903.

[1] Compt. rend. de l'Acad. des Sciences, 1903, cxxxvi, 461-4.

[2] Centralbl. f. Bact., 1903, xxxiv, 28-34, 122-143.

Copenhagen was able to work with an inoculable, spontaneous tumor in a white mouse. He has carried the experimental inoculation through nineteen generations, and other experiments have been made with a view to producing active as well as passive immunity—at the same time as the tumor cells have been subjected to various procedures calculated to throw some light on their properties. This tumor occurred originally subcutaneously, and was in structure a carcinoma, which character it subsequently maintained. Subcutaneous injections of material rubbed up and suspended in salt solution were followed, as a rule, in fourteen days or so by the development of a small nodule at the site of injection, which slowly increases in size up to 15 to 20 grams. Metastases seem not to have occurred. During two and a half years successful transplantation has been made, as stated, through nineteen generations, about 50 per cent. of the animals used proved susceptible. As in the experiments of Leo Loeb, Herzog, Moran, it here also concerns a genuine transplantation, and not a true infection, because Jensen, who studied this point with the greatest care, found that simple crushing of the tumor cells before injection gave always negative results. Living cells must be transferred in order to secure success. These and the other experiments with transplantable tumors lend no direct support whatsoever to the parasite theory of tumors. In reality, successful transplantations in the same species are, so to speak, equivalent to the development of metastases in the individual. Jensen found that the tissue of the tumor he followed through so many animals remained alive for about eighteen days at a temperature of 1 to 3 C., at room temperature for about twelve days, but at bodily temperature only for twenty-four hours. The cells were killed by heating for five minutes to 47 C. and by exposure to —20 C. for twenty minutes. The tumor tissue was also killed readily by intense light, but the rays have the power to penetrate only for a small distance into the depths of the tissue. Here are examples of the procedures to which transplantable tumors may be subjected, with the view of laying bare some of the secrets of the tumor-producing forces: Carcinoma in mice appears to offer good starting points for valuable studies of this kind, and it is very desirable that examples of tumors in this and other animals be placed at the disposal of competent pathologic laboratories. Physicians who may come to know of tumors in mice, dogs, cats, etc., will render science a service by securing such animals for experimentation under the most favorable conditions.

Medical News.

CALIFORNIA.

Aged Physician Injured.—Dr. Malek A. Southworth, San Jose, while driving across a railway track at Wayne, was struck by a train and sustained severe scalp wounds and contusions, and the fracture of two ribs.

Dr. Landis Released.—The Supreme Court has decided that Dr. Amos J. Landis, Chico, convicted of forgery and sentenced to serve seven years in prison, was indicted by a biased and prejudiced grand jury, and given a partial trial; and, therefore, that the judgment of the lower court is reversed.

Bogus Inspector Convicted.—H. G. Myers, Stanford, who traveled around the country representing that he was commissioned by the State Board of Health to examine women, was sentenced to imprisonment in the county jail for ninety days and to pay a fine of $200, the limit allowed by law.

Personal.—Dr. Charles F. Taggart, Los Angeles, chief surgeon of the San Pedro, Los Angeles and Salt Lake Railroad, has gone to Salt Lake City to arrange a hospital service for the road. ——Dr. Albert C. Rogers, Los Angeles, has returned from Europe.——Dr. Charles B. Brigham, San Francisco, had a paralytic stroke, July 10, and is lying seriously ill at his country place near Lake Tahoe.——Dr. Norman H. Morrison, San Francisco, sailed, July 16, for a tour of the Hawaiian Islands.——Dr. Thomas M. Hayden has succeeded Dr. George H. Aiken as president of the Fresno Board of Health.——Dr. John H. Meyer, San Bernardino, has begun his official work as county physician and superintendent of the county hospital, vice Dr. Samuel G. Huff.——Dr. and Mrs. Hoell Tyler, Redlands, have gone to Europe.

COLORADO.

Personal.—Dr. Anders J. O. Lof, Aspen, returned, July 17, from Vienna.

Illegal Practitioner Flees.—"Dr." M. E. McGrath, who was arrested at Denver, charged with practicing medicine without a license, has fled from the city, forfeiting his bond of fifty dollars.

Denver's Deaths.—In May 198 deaths were reported in the city and county of Denver, equivalent to an annual death rate of 13.57 per 1,000. Of these 62 were due to tuberculosis; 18 to pneumonia, and 11 to valvular heart disease.

Hospital Changes Name.—Following the consolidation of the city and county governments, the name of the Arapahoe County Hospital has been changed to the Denver City and County Hospital. The management of the hospital is now under Health Commissioner Dr. Augustus A. Clough.

Hospital Incorporated.—Drs. Samuel T. Quick, Albert W. Killgore and E. Stuver have incorporated the Fort Collins Hospital Association, with a capital stock of $50,000. Nearly all the physicians of the city are identified with the enterprise as stockholders, and as all physicians are guaranteed complete professional control of all cases they may send to the hospital, the undertaking is looked on with great favor, both by the profession and citizens generally.

ILLINOIS.

Maternity and Orphan Asylum.—Contracts have been let for a two-story building for the St. Vincent Maternity and Infant Asylum, at Park Ridge, to cost $20,000.

National Guard Appointment.—Dr. Arthur F. Wilhelmy, Decatur, has been appointed assistant surgeon in the Illinois National Guard, with the rank of first lieutenant, and assigned to the Fifth Infantry.

Healers Jailed.—Two alleged magnetic healers, who fleeced many citizens of Peoria and then levanted, have been captured in Omaha, and will be returned to Peoria, where they will be prosecuted on a charge of obtaining money under false pretences.

No Typhoid in Illinois River Water.—The commissioners appointed to investigate the condition of the Illinois River in the case of the State of Missouri against the State of Illinois, for alleged pollution of the Mississippi River, have been unable to find a single typhoid germ in the Illinois River.

Births and Deaths.—Circulars have been mailed by Secretary James A. Egan of the State Board of Health, to the physicians of Illinois, calling their attention to the new certificates of deaths and births, which they are required by law to fill out and return to the county clerk, and in Chicago and Peoria, to the Commissioner of Health, in the cases of births, and in the cases of deaths to the State Board of Health, except in cities where burial permits are issued. He accompanied the circular with sample certificates and with a circular issued by the United States census office on "The Relation of Physicians to Mortality Statistics." The new law is being very generally complied with.

Chicago.

Licenses for Infant Nurseries.—Two licenses and permits to conduct infant nurseries have thus far been issued by the city clerk.

Bequests.—By the will of the late Horace P. Taylor, $9,400 each is bequested to St. Luke's Hospital and the Chicago Baptist Hospital, to be used for endowing free beds.

Physicians in Collisions.—During the past three weeks Drs. Arthur R. Edwards, Frank W. McNamara, Louis A. Greensfelder and Jacob Frank have suffered physically or financially by the collision of carriages in which they were riding, with other vehicles.

Fights Fine.—Dr. Frederick L. Orsinger has secured an injunction restraining the State Board of Health, Justice Chott, and his constable from causing his imprisonment or enforcing a judgment for $100 and costs secured against him for alleged violation of the medical laws.

Summerers.—Dr. E. Fletcher Ingals has gone to Connecticut, where he expects to spend the next two months rusticating, and incidentally learning to play golf.——Dr. Frank Billings is at his cottage at Mackinac.——Dr. Henry Hooper is spending his vacation at the Huron Mountain Club, Lake Superior.

Low Death-Rate.—A phenomenally small proportion of deaths among the aged is mentioned by the Department of Health, as one of the noteworthy features of a remarkably low July death rate for the week ended July 25. There were only 55 deaths among those over sixty years of age reported out of the total 513 at all ages, while the rate for the total—14.19 per thousand—is the lowest ever recorded for any July week in Chicago. For the 25 days of the month the rate is 14.69 per thousand as against an average July rate for the previous ten years of 17.64 per thousand. This decrease of more than 16 per cent. is to be attributed chiefly to the low and equable temperature of the month.

INDIANA.

Proposed Medical College Merger.—There is a movement in progress to form a union of the faculties of the Medical College of Indiana and the Central College of Physicians and Surgeons with a possibility of its consummation. There would then be but one medical college in Indianapolis, and it may become a medical department of the Indiana University, which is located at Bloomington. With a view to consolidation, a committee from each institution has been appointed to outline an agreement satisfactory to each interest.

Deaths in June.—There were reported 2,265 deaths, an annual rate of 10.9 per 1,000; 306 were under 1; 147 were 1 to 5; 60 were 5 to 10; 45 were 10 to 15, and 589, or 27.9 per cent. of the total were 65 and over. The consumption deaths numbered 306, the city rate being 1.7 per 100, and the county rate 1.3. Deaths from certain important causes were: Pneumonia, 124; diarrheal diseases, 75; cancer, 96; typhoid fever, 42; diphtheria, 15; scarlet fever, 7; whooping cough, 24; puerperal fever, 8; violence, 133, and smallpox, 4.

Diseases in June.—The monthly bulletin of the State Board of Health, shows that rheumatism was the most prevalent disease and that tonsillitis and bronchitis were respectively second and third in prevalence. Typhoid fever was fourth, having stepped up from seventh place in the preceding month. Smallpox was sixth, having fallen from third place. Diarrhea, as was to be expected, increased in June over May, yet dysentery and inflammation of the bowels show no increase. Diphtheria, pneumonia and influenza were very much less in June than in May.

Personal.—Dr. John G. Wishard and family, Indianapolis, start early this month for Persia, where Dr. Wishard returns as medical director of the American Presbyterian Hospital, Teheran.——Dr. Charles E. Laughlin, Orleans, has been appointed superintendent of the Southern Indiana Hospital for the Insane, Evansville.——Dr. Charles M. Eisenbeiss, Elkhart, recently appointed a member of the State Board of Health, has resigned as coroner of Elkhart County, and Dr. Fred N. Dewey, Elkhart, has been chosen in his stead.——Dr. Jehu Z. Powell, Logansport, has been appointed physician at the National Soldiers' Home, Johnson City, Tenn.

IOWA.

Drake's Cornerstone Laid.—The cornerstone of the new medical building for Drake University, Des Moines, was laid, July 10. General Francis M. Drake delivered the address.

Explosion in Physician's Office.—Dr. W. P. Hombach, Council Bluffs, suffered severe contusions, and Mrs. Hombach a compound fracture of the leg in an explosion of illuminating gas which had accumulated under the new office building of Dr. Hombach. The building was completely wrecked.

New and Enlarged Hospitals.—Burlington Hospital is to have an addition and a nurses' home erected, to cost $35,000.——St. Thomas' Hospital, Marshalltown is now almost ready to receive patients. The formal dedicatory exercises will be held later.——Charles H. Keck has given to Washington, to be used for a hospital, the residence of his deceased father. The property is valued at $10,000.

Personal.—Dr. Albertus J. Burge, Iowa City, has been appointed assistant to the chair of surgery in the University of Iowa.——Drs. Alphonse L. Hageboeck and Edward F. Strohbehn, Davenport, have returned from Europe.——Dr. Donald McCrae, Jr., Council Bluffs, has been appointed surgeon-major in the Iowa National Guard, and assigned to the Fifty-sixth Infantry, vice Dr. Gilbert L. Pray, Lake City, resigned.——Dr. Albert S. Rider, Donnellson, has been elected professor of pathology and bacteriology in the Keokuk Medical College, College of Physicians and Surgeons.

KANSAS.

Fire at Sanitarium.—Four lives were lost at a fire which destroyed Bonner Springs Sanitarium on July 16. The financial loss is estimated at $20,000.

Medical Department for National Guard.—A medical department has been organized in the National Guard under the command of Surgeon-General Dr. Henry O'Donnell, Ellsworth.

Superintendent Assaulted.—Superintendent Thomas C. Biddle, M.D., of the Topeka State Hospital was assaulted by two attendants, who were afterward dishonorably discharged from the institution.

Meffert Appeals.—Dr. William M. Meffert, Emporia, whose license was revoked June 12 on account of gross immorality, has taken an appeal to the United States Supreme Court, and meanwhile continues to practice.

License Revoked.—The State Board of Medical Registration and Examination revoked the license of Dr. Robert E. Gray, Garden City, on the ground of immorality and unprofessional conduct in the case of Irma Brown, of whose murder Gray was acquitted in Chicago in 1902. Gray says that he will appeal to the Supreme Court.

KENTUCKY.

Dr. Bodine Out of Danger.—Dr. James M. Bodine, Louisville, on whom an operation was performed July 1, is now reported to be securely convalescent.

Commencements.—The medical department of Kentucky University conferred degrees on a class of 57, July 3.——Kentucky School of Medicine graduated a class of 56, July 8. The doctorate address was delivered by Dr. William H. Wathen.

Personal.—Notre Dame University, at its recent commencement, conferred the degree of LL.D. on Dr. Martin F. Coomes, Louisville, editor of the *American Practitioner and News.*——Dr. Cleon C. Owens, Frankfort, was painfully injured by a fall while climbing cliffs on the Kentucky River.——Dr. William S. Yazell has been elected health officer of Maysville.——Dr. John C. Cassidy, Eminence, has been elected secretary, and Dr. Pink H. Crutchfield, Bethlehem, president, of the Henry County Board of Health.——Dr. Rolla H. Alexander, assistant physician at the Eastern Kentucky Asylum for the Insane, Lexington, has resigned.

Requirements Must Be Enforced.—The requirements governing entrance to the different medical colleges of Kentucky are to be rigidly enforced, according to action taken at a meeting of the executive board of the State Board of Health in Louisville. The penalty of being refused recognition was provided, to compel all reputable institutions to adhere to the rules. This action resulted from a conference between the deans of the medical colleges and the members of the State Board of Health held May 22. It was alleged at that meeting that many medical schools in Kentucky have at various times admitted students in violation of published requirements and have offered them private inducements to take up the study of medicine. It is said that these allegations were confirmed.

MASSACHUSETTS.

Milford Hospital Dedicated.—Milford has a new hospital built through the generosity of Hon. Eben S. Draper, the manufacturer of Hopedale, at a cost of more than $60,000, which was dedicated by appropriate exercises, July 24, in the presence of more than 15,000 people.

State Mortality.—For the week ended July 11 40 cities and larger towns of Massachusetts reported a mortality of 675. Of these 254 were of children under 5 years; 187 were from infectious diseases; 51 from acute lung disease; 61 from phthisis; 5 from diphtheria; 7 from scarlet fever, and 95 from diarrheal diseases.

Floating Hospital Busy.—The Boston Floating Hospital is as busy as usual. The first ten days of its service showed 100 different patients cared for, 60 of whom were permanent patients. The number of ileocolitis cases has been much smaller than usual, while the number of marasmus cases has been larger than usual. Six or eight sick babies are refused each day on account of lack of accommodations.

Boston's Deaths.—The mortality record for the week ended June 25 shows a little gain, 188 deaths were reported, equivalent to an annual death rate of 16.25 per 1,000. Of these pneumonia caused 8; pertussis, 2; heart disease, 19; bronchitis, 2, and marasmus, 1. There were reported of diphtheria, 35 cases, with 4 deaths: of scarlet fever, 20 cases; of typhoid fever, 21 cases; of measles, 20 cases, with 2 deaths, and tuberculosis, 20 cases and 28 deaths.

NEW JERSEY.

Lacks Authorization.—It has been discovered that the bill appropriating $200,000 for a state tuberculosis sanitarium is not a law, because the act of authorization was overlooked, or purposely omitted.

Personal.—Dr. C. Radcliffe Johnson, Atlantic City, who recently accepted an appointment as medical missionary to the Philippines under the auspices of the Episcopal church, and is to be stationed at Manila, sailed from San Francisco June 11.

Isolation Hospital Burned.—The building erected in Orange as an isolation hospital for smallpox, in 1901, was burned July 2, with all its furniture and medical supplies. The loss is $2,000. It is believed to have been the work of an incendiary.

Examiners Elect.—At the annual meeting of the State Board of Medical Examiners, held in Long Branch, July 6, Dr. John W. Bennett, Long Branch, was elected president: Dr. E. L. B. Godfrey, Camden, secretary, and Dr. Armin Uebelacker, Morristown, treasurer.

OHIO.

Personal.—Dr. E. Marion Foster has returned after a year abroad and has located in Cincinnati.

Warning.—Dr. Walter H. Snyder, Toledo, warns physicians against R. N. Rumnis, an individual of medium height, reddish hair, slender, fair-skinned, freckled, who offers premiums for subscriptions to *Collier's Weekly*; collects for a year's subscription, giving discount: leaves the premium offered, which half an hour later he borrows or steals.

Uniform Course Favored.—The State Board of Medical Examination and Registration met with representatives of several of the medical colleges, July 8, to arrange for a uniform curriculum throughout the state. Those who addressed the board were Drs. B. L. Milliken, Western Reserve Medical College, Cleveland; G. J. Jones, Homeopathic Medical College, Cleveland; Park L. Myers, Toledo Medical College and C. E. Walton, Cincinnati Medical College. All were in favor of a standard course of study. Drs. Ravogli, Wilson, Baxter and Towers of the board were appointed a committee to confer with the faculties of the medical colleges and report at the meeting in October.

PENNSYLVANIA.

Typhoid Alarms.—For the week ended July 25, 112 new cases of typhoid fever were reported in Pittsburg. The health officials forecast an epidemic and unanimously attribute the disease to the impure water supply of the city.

Crozer Hospital Opened.—On the anniversary of the birth of the donor, July 17, the J. Lewis Crozer Hospital, Chester, was formally opened. The construction and equipment of the hospital, done in accordance with the will of the benefactor, were supervised by Mrs. Crozer.

Impure Molasses Prosecutions.—The State Dairy and Food Department have served warrants on 25 dealers in Philadelphia on the charge of selling as the pure article adulterated molasses, which the law required to be marked "compound." This fight, Commissioner Warren is quoted as saying, is made against the "molasses trust," which, he says, has kept up this illegal traffic in defiance of the law.

Philadelphia.

Tenth Tetanus Death.—The tenth victim of tetanus from the Fourth of July toy pistol died in the Philadelphia Hospital last week.

Personal.—Dr. Henry W. Stelwagon has been made an honorary member of the National Dermatological Society of France.

Anti-Spitting Ordinance Enforced.—Enforcement of the anti-spitting ordinance has begun in earnest. A considerable number of men and boys have been arrested for spitting on the sidewalks. Some have been fined $1 and costs, the penalty the ordinance provides for each offense; several have been held under bail for further hearing. One refused to pay his fine and was held under $300 bail to keep the peace.

High Infant Mortality.—The infant mortality for the week ended July 25 was high, cholera infantum being ascribed as the cause of 82 deaths. There were 15 new cases of smallpox, as against 24 for the previous week. Director of Health Martin is quoted as saying: "Smallpox in this city is bottled up at least, and we have it under control." Physicians of the Department of Health continue to vaccinate bodies of workingmen and factory employes, and hospitals are requested to vaccinate all dispensary and accident cases not so protected.

Water Conduit Completed.—The blasting and digging of the largest water conduit in the world has just been completed. This is a part of the filtration system of Philadelphia under construction, and is to carry the water from the Torresdale filter plant to Lardner's Point pumping station. The work was begun 18 months ago. Much of the tunneling was through solid rock 100 feet under ground. The conduit is 14,000 feet long, and will have a capacity of 300,000,000 gallons daily. The portion of the filtration system completed, the Roxborough plants now yield 27,000,000 gallons daily, and the output will soon be increased to 5,000,000 gallons.

Management Unsatisfactory.—Dr. Martin, director of the Department of Health, was not satisfied with the management of the Municipal Hospital when he assumed the duties of his office. He has made several visits of inspection, and as a result improvements are reported. In published interviews Dr. Martin is reported to have charged "gross negligence" to the management. There are said to be many "leaks" for contagion, the wages of employes are in arrears, the plumbing is unsanitary, and an efficient disinfecting plant is needed. Radical changes in the personnel of the hospital staff are said to be contemplated, and it is not improbable that Dr. William Welch, who has been physician in charge for twenty-five years, will be relieved by another physician under the title of chief resident physician. Dr. Welch may be made consulting physician to the institution. Dr. Jay F. Schamberg is now assistant to Dr. Welch.

Infant Prophylaxis.—The Bureau of Health has begun, through the city district physicians, a census of all babies of the city under one year. The canvass is for the purpose of improving the hygienic care, especially the feeding of infants. The inspectors, on cards provided for the purpose, are to take a brief history of each infant and note its environment. A circular, printed in different languages, giving rules for the care of infants, is to be given to each mother. The inspectors are directed also to give simple instructions to mothers, and to urge vaccination in cases of infants not already vaccinated. It is the plan of the department to give public talks to mothers on the preparation of food and the management of infants, by physicians, who will volunteer to do so. The babies' directory is to be the basis of a scheme to lower the infant morbidity and mortality, especially during the hot months. This work is to co-operate with that of the modified milk plant which is being installed, and which is to furnish infants' food at cost.

GENERAL.

Leper Colony in Good Condition.—The annual inspection of the leper settlement on Molokai was completed July 20. Everything was reported in a satisfactory condition: Ten persons were found free from the disease and were released. Confirmation of the diagnosis of leprosy was announced concerning a number who had protested that the diagnosis was erroneous.

FOREIGN.

The Swedish Medical Association has lately been reorganized on practically the same plan as the American Medical Association.

Hospital at Port Arthur.—The Russian government has appropriated over a quarter of a million dollars to construct a large hospital at this point, with a sanatorium for patients with lung troubles.

Projected Asylum for Orphans of Physicians and Druggists.—Dr. E. Buday, of Budapest, has organized a committee which is soliciting subscriptions and arousing interest in the foundation of an asylum and school for this purpose in Hungary.

American Mosquitoes Plague London.—It is alleged that the notable increase in the number of mosquitoes about London is due to the importation by ships of American and South African varieties, which bred prolifically on the new soil. It is said that England already had twenty-two varieties of mosquitoes.

The Gera Contract Practice Trouble.—The latest phase is that the sickness insurance societies refuse to pay their whilom medical officers for the last quarter of the year for which they served, claiming that they should be made to pay for the expenses caused the society by their resignations. The physicians have appealed to the courts.

The Approaching Sanitary Conference at Paris.—Italy took the initiative in summoning the international sanitary conference which will meet at Paris, October 10. No program has as yet been announced, but it is understood that the aim is to propose modifications of international sanitary measures based on the results of the latest researches.

Accident Insurance in Berlin.—In the further working out of the industrial accident insurance in Germany, the edict has recently been passed that the family is entitled to an indemnity when the victim of an accident contracts a fatal infectious disease in the hospital to which he has been transported. The regulations assume that the danger of infection is greater in a hospital, and that the subject is less resistant on account of the traumatism, so that the latter is indirectly responsible for his death.

The Knoll Prize in Bohemia.—The Philipp Knoll prize of 2,000 crowns was awarded this year for the first time, and not strictly in accordance with the ideas of the founder. It should be attributed to some one of the younger German Bohemian scientists for the best work done in the last three years. Instead of that, it was divided among Professor Bayer and Dr J. Langer, for work on congenital hernia and the lymph glands and bee poison, both dating from several years ago, and A. Fischel and O. Bail for recent research.

Institute of Legal Medicine at Paris.—A decree dated June 22, provides for the establishment of an institute for legal medicine and psychiatry for the training of experts for forensic cases. It will be in charge of the dean of the medical faculty, and lectures and practical instruction are to be given by various professors and hospital physicians. The *Progrès Médical* comments that if the institute is to depend on the city morgue for its material and is not to be equipped with up-to-date laboratories and spacious dissecting rooms, it will fall lamentably short of the purpose for which it is intended.

Sequel to the Nardenkoetter Charlatan Case.—The charlatan Nardenkötter, who escaped to England and forfeited his large bail rather than face his sentence of three years' imprisonment and a heavy fine, we learn has been handed over to the Berlin police by the English authorities. The Journal related some of the particulars of the sensational case at the time. The family bath tub in which the charlatan compounded his medicines has been satirized in many ways since. The gullibility of the public has seldom been better evidenced, although an ad that has been appearing in a German paper from the Munich charlatan, Weselmann, seems to count on still greater credulity. The latter advertises that he can diagnose all diseases, past, present, and those still in the germ, by examining the eyes. One of our exchanges comments that this method of treatment is not so much of a mockery of the science of the twentieth century as it is an arraignment of the laws which permit such a method to be publicly exploited for gain.

Penalties for Charlatans' Advertising in Germany.—The editor of the advertising portion of the Breslau *General-Anzeiger* was warned by the authorities in regard to the fraudulent character of the ads of a certain charlatan named Malisius, who claimed to cure all diseases. He continued to print the ads and has recently been condemned by the Breslau courts to a fine of 3050 marks, about $765. The court stated that the editor in publishing the advertisement was more culpable than the charlatan, as if the papers did not aid the quack he would not become so well known. Malisius himself was condemned on 22 counts of accomplished and 9 of attempted fraud, to a fine of 1500 marks, or $375, and eighteen months' imprisonment. A woman at Elberfeld has also been fined $40 because she advertised that she treated gynecologic affections, kidney and bladder troubles, gout, etc., "according to the latest scientific methods and researches," but was compelled to confess that she had not the slightest knowledge of recent scientific research.

Contract Practice in Germany.—The *Deutsche Med. Wochft.* announces that the medical officers of the sickness insurance societies at Munich unanimously resigned their positions July 1, as anticipated, on account of the increased demand on them to be imposed by the new legislation previously mentioned in these columns, and the refusal of the societies to increase their remuneration to correspond. A committee had been appointed by the "county" medical society to obtain the moral support of the local profession for this step on the part of the "*Kassen*" physicians, and the committee reported June 18 that more than 99 per cent. of the physicians in the province had signed the circular. The editorial commends "the organization of the Munich physicians, their unanimity and energy, as a shining example for us all." Later reports from Munich state that whereas, before the resignation of the medical officers the *Kassen* would not listen to their appeals, since then they have already made overtures for a consideration of the matter, which the profession hails as a material victory, and hopes for a speedy, peaceful settlement of the question.

British Degeneracy.—The question which we mentioned as exciting the English press and people, whether or not the British race is deteriorating physically, is exciting as much discussion there as did the "race suicide" matter in the United States. By way of continuing the matter under discussion and broadening its scope to include the mental status, the lay press quote Dr. Ernest W. White, professor of psychologic medicine at King's College, as having said in his presidential address to the Medical Psychological Association that facts point to an accumulation of the chronic insane and that the number of cases of melancholia had vastly increased, frequently resulting in chronic insanity. During the last few years Dr. White had been struck by the large number of cases of evolutionary mental breakdowns occurring in patients of the upper and middle classes from eighteen to twenty years of age. This was the result of the strain of education and the worries of life on brains unequal to the stress under which Londoners lived. Late marriages were more frequent than they were fifty years ago, and that did not conduce to healthy stock. Late hours, unnatural excitements and the greater stress of life all had their effect on the increase of insanity, and he feared that the race generally was less robust mentally, as well as physically, than formerly.

Cancer Research.—The German committee for cancer research announces the foundation of a "*Zeitschrift für Krebsforschung*" to be published by G. Fischer at Jena in connection with the *Klinisches Jahrbuch*, although as a separate periodical. The editors are to be Professor v. Hansemann and G. Meyer of Berlin. At the meeting of the committee, February 28, it was announced that collective statistics are being gathered in Spain under the leadership of Hans Leyden, nephew of von Leyden of Berlin. Great interest is being manifested also in Russia where a model Institute for Cancer Research has been erected at Moscow as previously mentioned in these columns. The English committee recently sent a delegate to Germany to study the arrangements there. "Prophylaxis of Cancer of the Stomach" was the main subject discussed, the importance of careful chewing being emphasized by Katz. Ewald, on the other hand, stated that in his experience cancer subjects had always lived temperately and chewed slowly and well. The contradiction between the greater prevalence of cancer in the large cities and in the well-to-do classes in opposition to its lesser frequency among the poor and in the country, where the food is coarse and not carefully chewed, was also brought out by some speakers. It can scarcely be explained by stronger teeth among country people. Von Leyden also corroborated the increasing frequency of cancer of the stomach in the well-to-do classes. He reiterated his belief in the parasitic nature of cancer, remarking, "We live on hope and work for the future."

Fee-Splitting in the French Courts.—A certain family physician at Joigny charged $100 for his share in conducting a case which required an operation for which the surgeon's charges were $400. The affair was carried into the courts and the physician's right to remuneration in connection with the operation was conceded, but the court decided that he must not charge in proportion to the expense of the high-priced consulting surgeon, but must be content with $30 instead of $100, thus fixing a standard rate for the attending physician in such cases. The *Progrès Médical* comments that a fixed charge is incompatible with the sliding scale generally adopted by the profession in accordance with the patient's means, from zero upwards.. It cites as a laudable attempt to solve the question the suggestion by certain medical syndicates that the family physician should receive *one-fourth* as much as the surgeon. If this rate were once accepted and incorporated in the medical relations with the public, the latter would know beforehand and could count on the expense of an operation and the after-care, and there would be nothing to conceal nor any suspicion of indelicacy on the part of the medical corps. The editor of the *Gaz. Méd. Belge* commenting on the same affair, remarks that the family physician can not always count on the good will of the family in respect to his emoluments in such cases. He suggests as remuneration for the responsibility of the diagnosis, preparation, etc., by the attending physician, that the specialist surgeon should charge a lump sum for himself and his aids, and that the attending physician should be considered and remunerated as one of his aids in the operation, which, of course, in most cases would amount to "division of fee."

LONDON LETTER.

Tsetse Flies and Trypanosomiasis.

The study of mosquitoes in connection with malaria and other tropical diseases undertaken by Prof. Ray Lankester and his assistant, Mr. F. V. Theobald, at the Natural History Museum, has given rise to an important monograph which is published by the trustees of the British Museum. It has been so useful to medical men working on these diseases that a similar study of tsetse flies is in the course of preparation. The tsetse fly of South Africa kills horses and cattle by introducing into their blood the *Trypanosoma brucei*. Dr. Castellani, a member of the Royal Society commission sent to Uganda to investigate sleeping sickness, has found in 70 per cent. of the cases a trypanosoma in the cerebrospinal fluid. It is suggested that the parasite may here also have been introduced by the tsetse fly. Professor Lankester has just received from Uganda a box of biting flies, which Mr. Austin, the expert dipterist of the museum, found to contain 10 tsetse flies of the species *Glossina palpalis*—a West African species known from the Gambia to the Congo. Dr. J. E. Dutton and Dr. J. L. Todd, who formed the trypanosoma expedition of the Liverpool School of Tropical Medicine, have just returned to England from Senegal. The expedition left Liverpool on August 21 last and proceeded to Bathurst in the Gambia. After working in the Gambia they went to Senegal. They found that trypanosomiasis occurs in both Europeans and natives, and is distributed from the sea to the upper Gambia. In Senegal the expedition received valuable assistance from the French authorities, who gave them every facility, including a large and well-equipped laboratory at St. Louis. They report that the anti-mosquito campaign at Bathurst has caused marked reduction in malarial fevers, both in Europeans and natives.

The Journal of the Royal Army Medical Corps.

A new journal, designed for the use of army surgeons, has just appeared under the editorship of Major R. H. Firth, professor of hygiene in the Army Medical School. The first number indicates that the journal will be one of high standing. It contains a minute and well-illustrated description of the hospital arrangements on board transports and a most interesting report of the medical relief expeditions to Martinique and St. Vincent in aid of the sufferers from the volcanic eruptions of May, 1902.

The Plague.

In Cape Colony, for the week ending June 20, the following cases were reported: Port Elizabeth, 2, 1 European female and 1 native male (found dead). At the Plague Hospital 1 native male died and 1 European male and 3 native males were discharged, leaving 8 cases under treatment. Plague-infected rats continue to be found in the town. At the plague hospital in East London 1 European female was discharged, leaving 4 under treatment. At King William's town 1 European female was discharged, leaving 11 cases under treatment. At Hong Kong for the week ending June 27 there were 54 cases (3 Europeans) and 35 deaths. In the market 5 ducks, a chicken and a quail were discovered, all of which had died from plague. The birds had apparently been infected from the basement dwellings in the market, and these dwellings will no longer be allowed to be used. In this connection it may be pointed out that Dr. W. J. Simpson, during his recent visit to the colony, showed that monkeys, pigs, calves, sheep, hens, geese, ducks, turkeys, and pigeons contracted the disease by feeding on infected material. These facts have a bearing on the mode of infection in man, and the prevalent view that he acquires plague mainly by inoculation. The fact that such a variety of animals can acquire the disease from their food suggests that he may also be so infected. It is the custom of the Chinese to eat half-cooked fowls and to use the uncooked entrails as a delicacy with their rice.

Sciatica and Rheumatoid Arthritis of Hip-Joint.

At the Polyclinic Dr. W. Bruce of Strathpeffer, a health resort for arthritic patients, almost went the length of maintaining that there is no such malady as sciatica in the ordinary meaning of the word (neuritis of the sciatic nerve), but that the cases so diagnosed are examples of arthritis of the hip-joint. It might be chronic rheumatic arthritis or acute or subacute gout. The pains in the thigh and leg he explained as "referred pains." He urged that there was never any anesthesia of the skin or reaction of degeneration. Neglect of examination of the hip was the cause of the mistake in diagnosis. Three supposed cases of sciatica were produced for demonstration. The points of differential diagnosis were gone through, and it was shown that in two out of the three cases the joint, and not the nerve, was affected. But in the third case no indications of joint disease could be elicited. All movements were borne without complaint, but pressure over the nerve caused flinching.

Correspondence.

Sacrificed to Eddyism.

Kansas City, Mo., July 14, 1903.

To the Editor:—I presume my indignation over and antagonism to the body known as Christian Scientists is but that of other members of the medical profession who have come in contact with them in case of serious illness and death, where their great assurance of power, though ignorance in reality, and criminality are demonstrated.

How we, an organized medical profession, and a civilized people, can or do permit them to continue to treat disease and surgical conditions in spite of common and frequent deaths due to their ignorance and neglect, is beyond comprehension! Yet I realize it is due no less to my tolerance than to that of thousands of others, both of the profession and the laity. We profess to have left behind us the Middle Ages with its superstitions, its atrocities and cruelties, but daily that period is being re-enacted in the homes of our neighbors, guided by the spirit of an autocratic despot, whose power for evil is quite that of her influence to instill professed happiness into the hearts of her deluded followers.

Within the past week I was called in to see a woman 73 years of age, a beautiful character, of bright mind, and extremely well preserved, and hopeful of living for years. For three days she had been ill and under the care of Christian Science healers and their nurse. It was evident I was called in by the family because her life was despaired of. An examination revealed a right, irreducible femoral hernia, frequent emesis, absolute constipation of three or four days' duration, localized pain on and without pressure. Gentle taxis, manipulation and hot applications proved of no avail at this time, though it can not be assumed in what such means might have resulted if resorted to at onset of descent of hernia. An operation was advised without delay, since the already serious symptoms were not only persisting but increasing, but in spite of advice and the horrible fecal vomit and the patient's agony, she was demonstrated over by these people calling themselves Christians, Scientists, Healers. In consequence, she died after an awful week—a victim to a pseudo-science—and in spite of the fact that an operation would have saved her. Through the ignorance and false faith of a sect fast attaching itself as a powerful factor in social and religious circles, this life was sacrificed, *in fact, murdered.*

Kansas City, like other cities and towns of the United States, has, during the past few years, had many deaths among Christian Scientists, and investigation has often proved, beyond a doubt, that death was not inevitable if medical service had been rendered. It would naturally seem that such instances would awaken the followers of Mrs. Eddy to a sense of their delusion, if not criminal responsibility. But, of course, to convince such devotees as come under the spell of a master, though degenerate, mind as is possessed by an Eddy or a Dowie, is not possible. The solution must, in all probability, come through popular education along lines of health and disease, and a persistent fight by the medical profession, for the passage of laws to protect society, especially the deluded adults of such a faith as in question, and the innocent, ignorant children who often fall victims to lack of a humanity which is Christian, and knowledge and skill which are truly scientific.

I wish to urge that the profession at large report every such case that may come to their knowledge, and that at the next meeting of the American Medical Association, proper and decisive steps be taken, seeking state and, if possible, national legislation which may limit and punish directly those responsible for such deaths. It is a sad reflection on the owners and editors of our daily press that we can not, through them, have started a propaganda against such sects; and, too, most popular magazines are loath to take a decided stand against them. Hence, as in the past, the medical profession has waged a successful fight against germ disease, it remains for it to continue with more determination than ever the struggle against a pandemic of mental degeneracy. Otherwise, we will have lost power to control and cure many diseases and surgical conditions over which we now have power, and which is giving us a yearly decreasing death rate.

Scott P. Child.

Weakness and Dilatation of the Heart in Chronic Nutritional Disease.

New York, July 11, 1903.

To the Editor:—With interest I read the paper of Dr. G. W. McCaskey with the above title in The Journal, July 11, 1903. My interest will be readily understood if I may be permitted to quote from my own writings a few practical points in regard to the relation of myocarditis or feeble heart in general to atonia gastrica, and one remark about my carbonic acid gas baths to take the place of Nauheim baths.

In the year 1895 Dr. M. Einhorn pointed out to me the frequency of the occurrences of splashing sound (that is, atonia gastrica) in cases of heart disease. We examined together a number of cases and I published the result of this investigation in a paper ("What is the Significance of the Splashing Sound of the Stomach," *N. Y. Medical Journal*, June 15, 1895). Later on I followed this subject independently from Dr. Einhorn, and called attention to the importance of this symptom of atonia gastrica in its different forms in numerous papers. Among others I had observed how it seemed to correspond in many instances with tachycardia.

In one of these papers ("Gastroptosia the Cause of Symptoms Erroneously Attributed to Nephroptosia," *N. Y. Med. Journal*, June 21, 1903) I referred to a case reported by Dr. Groddeck of Baden Baden as follows:

> An elderly gentleman is suffering for several years from attacks of vertigo and unconsciousness. Almost daily, sometimes hourly, and even at shorter intervals, the alarming symptoms appear. The frequency of the pulse is 27 31 beats in the minute; only every second contraction of the heart causes pulsation. All the physicians who saw the case diagnosticated, quite correctly, myocarditic affection and treated him accordingly, but without success. The enormously distended belly of the patient had not been taken into consideration until Dr. [illegible] tion to it The reduction of the size of th[illegible] lid not cure the diseased myocardium, was [illegible] of the attacks of vertigo and unconsciousne[illegible] ght of the belly, having been *reduced* the work of the heart was materially relieved, relieved to such an extent that even the imperfect contractions were sufficient to fill the brain with the necessary quantum of blood It is sometimes of more importance in cases of heart disease to examine the abdomen than to distinguish the fine points of the auscultatory symptoms.

In every case of heart disease in which I find atonia gastrica I make it a point to relieve the relaxation of the abdominal viscera by means of plaster strapping, a method which I have frequently described. I have had invariably the satisfaction to see the beneficial effect on circulation and nutrition.

The absorption of large amounts of carbonic acid gas by the skin has a remarkably beneficial effect on the circulation, whether it is introduced into the rectum or dry gas baths are taken. The capillaries and arteries become dilated, the amount of blood in both, as well as the blood pressure in the arteries, is increased. The diastole of the heart becomes more effective. These are matters of significance, for the heart and its work in so far as the intensity of the peripheral arterial circulation is augmented, and the drawing of the blood from the veins facilitated. The diastolic filling is improved, and the heart muscle is given more time for relief and for renewed energy.

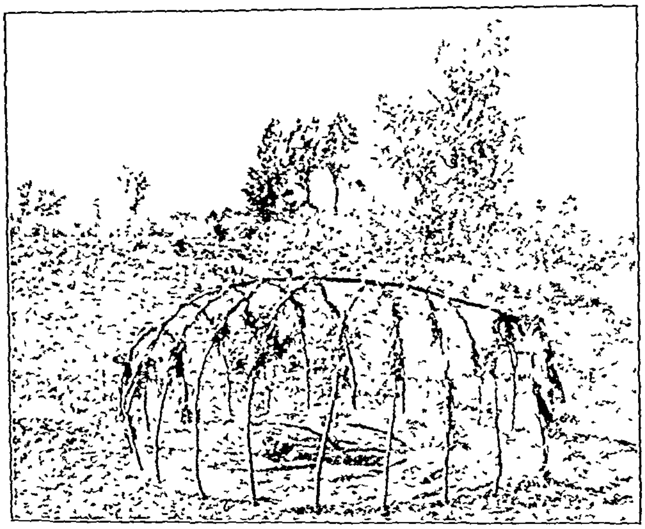
The question is now, why should we use the Nauheim baths to obtain this effect pure and simple of carbonic acid gas? The Nauheim baths are complicated, accidents are at least possible by the inhalation of the gas floating on the water. The dry gas baths, as they are given in Franzensbad, are perfectly harmless, no accidents, at least when the arrangements are made as I have made them, are possible, and the patient can enter without undressing. Every physician can improvise such a bath in his office.

A. Rose.

An Indian Bath.

Philipsburg, Mont., July 7, 1903.

To the Editor:—I noticed lately an article on the improvised Russian baths of the North American aborigine. In Wyoming, Idaho, Montana, Washington and British Columbia they are erected on the banks of streams, rivers and lakes, and in close proximity to a deep pool. Sometimes the work is extremely crude, just a few willow boughs slightly interlaced and barely large enough to hold an adult in a crouching position, the hole in the center, a shallow depression, and no attempt at comfort for the victim. Accompanying this is a photograph of the best constructed one I ever saw. It was made by Flatheads, or as they call themselves, "Selish." The length was 95 inches on the ground, and the height 81 inches in the center. The willows from each side are deftly twisted and braided together in the middle, the ends are tied with bright red flannel, of which a piece is continued over the top like a ridge pole; the hole in the center is 19 inches square, and nearly 13 inches in depth, and where the bather lies is spread with deep grass, called sometimes wild rye. This one was possibly used for more than one bather at a time.



E. F. Conyngham.

American Research and German Reviewers.

New York, July 21, 1903.

To the Editor:—Anent your editorial under above title I wish to state that the *Biochemisches Centralblatt* has since its inception endeavored to furnish abstracts, and in many instances auto-abstracts of all publications pertaining to the special field, and that the American collaborators have been instructed to prepare abstracts of every important article and to report the original works executed in American laboratories.

Heinrich Stern,
American Editor *Biochemisches Centralblatt*.

Queries and Minor Notes.

MEDICAL ETHICS.

Albert, W. Va., July 14, 1903.

To the Editor:—1. Dr. A. is in attendance on a case of appendicitis and he decides that an operation is necessary. The family ask that Dr. B. be called in consultation. Dr. B. agrees with

Dr. A. The family then ask that Dr. B. do the operation. This is not satisfactory to Dr. A., who had expected to do the operation himself. What course should each physician pursue?

2. Recently Dr. Z., a noted surgeon, was called to a neighboring state to operate on a physician. The operation was not successful and the physician died. Dr. Z. charged the brother of the physician for his services. Was this not positively unethical? A. P. B.

Ans.—Dr. B. should perform the operation, since the family request it. The patient and the family have a perfect right to decide on who shall perform the operation, in spite of the fact that it might not be pleasant for Dr. A. in this case.

2. The Principles of Medical Ethics of the American Medical Association, Chapter II, Article 2, Section 3, says:

> When a physician is summoned from a distance to the bedside of a colleague in easy financial circumstances, a compensation, proportionate to traveling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor, should be made by the patient or relatives.

One physician ought not expect another to render his services, pay traveling expenses, etc., without remuneration. The general principle is that if a physician can render services without very great inconvenience to himself, or too much expense, no charge should be made. If, however, as in this case, the physician must make a journey to a neighboring state to render these services, he should be compensated, but compensation under these circumstances should, of course, be the minimum which will pay him for his time and trouble.

RADIUM.

Stanberry, Mo., July 20, 1903.

To the Editor:—I notice an editorial on radium in the last issue of The Journal. Can you tell me where I can get a small quantity of the metal or its bromin salt? E. T. C.

Ans.—Radium is hardly yet a commercial product, and samples are obtained more by favor than otherwise. It is thus far more of a scientific curiosity than anything else.

State Boards of Registration.

Reciprocity in Oregon.—The Oregon medical practice act was amended by the last legislature so as to provide for reciprocity.

Suit to Oust California Examiners.—On the petition of Dr. David A. Hodghead, San Francisco, suit has been begun in the Superior Court to oust the members of the State Board of Medical Examiners. According to the newspapers, the complaint sets forth that the defendants hold their places by virtue of having been elected to represent on the board the Medical Society of California, the California State Homeopathic Medical Society and the Eclectic Medical Society of the State of California, and the petitioner holds that these are simply private organizations with no legal right to appoint anybody to public and salaried offices. The petitioner is dean of the College of Physicians and Surgeons of San Francisco, which had some trouble with the board last year.

Vermont Has Reciprocity.—The following amendment of Section 4633 of Chapter 190 of the Vermont statutes provides for reciprocity. The section as amended is as follows:

> Section 4633. Each board of censors shall issue certificates to physicians and surgeons who personally present to such board a diploma from a medical college or university, and who also, by examination, satisfy said board of censors that they are qualified to practice the branches mentioned in said diploma; and to such physicians and surgeons, without examination, who shall personally appear and present a certified copy of certificate of registration or license, which has been issued to said applicant in another state of the Union, where the requirements for registration shall be deemed by said board to be equivalent to those of this state; provided, such state shall accord a like privilege to holders of certificates from a board of censors of this state.

The application fee is $5. The act is in effect since its passage.

Practice of Medicine Defined in North Carolina.—The following amendment defining the practice of medicine was passed by the general assembly of North Carolina and went into effect March 9, 1903:

> Section 1. That Section 3122 of the code be amended by adding thereto the following words: For the purposes of this act the expression "practice of medicine or surgery" shall be construed to mean the management or treatment for fee or reward any case or disease, physical or mental, real or imaginary, with or without drugs, surgical operation, surgical or mechanical appliances, or by any other methods whatsoever.
>
> *Provided*, that this act shall not apply to midwives nor to nurses.
>
> *Provided*, further, that applicants not belonging to the regular school of medicine shall not be required to stand an examination except on the branches taught in their regular college, to-wit: the osteopaths shall be examined only on descriptive anatomy, general chemistry, histology, physiology, urinalysis and toxicology, hygiene, regional anatomy, pathology, neurology, surgery, applied anatomy, bacteriology, gynecology, obstetrics and physical diagnosis.
>
> *Provided*, that this act shall not apply to any person who ministers to or cures the sick or suffering by prayer to Almighty God, without the use of any drug or material means.

Michigan Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the examination held at Lansing, June 9 to 12, as follows: Number of subjects examined in, 19; total number of questions, 190; percentage required to pass, 75; written examination; total number examined, 22; number passed, 18; number failed, 4.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
		PASSED.		
1	R.	Med. Dept., West. Univ., Lond., Ont.	1903	92.21
2	R.	Med. Dept., West. Univ., Lond., Ont.	1903	86.05
10	R.	Med. Dept., West. Univ., Lond., Ont.	1903	86.89
3	R.	Med. Dept., Trinity Univ., Toronto.	1903	92.84
4	R.	Med Dept., Trinity Univ., Toronto.	1903	92.15
5	R.	Med. Dept., Trinity Univ., Toronto.	1903	93.31
6	R.	Med. Dept., Victoria Univ., Toronto	1888	75.00
8	R.	Med. Dept. University of Vermont.	1896	77.57
7	R.	Miami Medical College, Cincinnati.	1887	82.21
9	R.	Cincinnati College of Med. and Surg.	1902	76.08
11	R.	Univ. Imperial Alexander, Finland.	1900	90.00
12	P.M.	College of Med. and Surg., Chicago.	1902	77.10
13	R.	Undergraduate and years of practice		*78.78
14	R.	Undergrad. and yrs. prac. lic. md. bd.		*76.52
15	R.	Undergrad. and yrs. prac. lic. md. bd.		†77.36
16	H.	Undergraduate, 4 years University of Michigan, Homeopathic Dept..		‖82.89
17	H.	Undergraduate, years of practice..		‡75.00
18	H.	Undergraduate, years of practice..		‡75.00
		FAILED.		
19	R.	Undergraduate		63.42
20	R.	Undergraduate		56.68
21	H.	Independent Med. College, Chicago (diploma mill)................	1897	2.05
22	R.	Dartmouth Medical College........	1886	71.78

* Fourth examination. † Board examination. ‖ First examination. ‡ First examination, oral.

North Dakota Report.—Dr. H. M. Wheeler reports the written examination held at Grand Forks, N. D., July 7, 1903, at which 25 applicants passed, out of 29 examined, in 13 subjects. The percentage required to pass was 75.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
		PASSED.		
410	R.	Northwestern University, Chicago.....	1903	75
412	R.	Northwestern University, Chicago.....	1903	81
413	R.	Northwestern University, Chicago.....	1903	84
411	R.	University of Michigan..............	1903	90
438	R.	University of Michigan..............	1883	92
415	R.	University of Minnesota.............	1903	85
417	R.	University of Minnesota.............	1902	76
419	R.	University of Minnesota.............	1903	77
425	R.	University of Minnesota.............	1903	86
426	R.	University of Minnesota.............	1902	80
433	R.	University of Minnesota.............	1903	86
435	R.	University of Minnesota.............	1903	86
428	R.	University of Pennsylvania..........	1883	82
431	R.	University of Missouri..............	1902	81
414	R.	College of Phys. and Surgs., St. Louis..	1903	76
422	R.	College of Phys. and Surgeons, Chicago	1901	82
437	R.	College of Phys. and Surgeons, Chicago	1903	75
416	R.	Queen's University, Canada..........	1903	80
421	R.	Rush Medical College, Chicago........	1901	77
434	R.	Rush Medical College, Chicago.......	1897	77
424	R.	Rush Medical College, Chicago........	1903	91
423	R.	Hamline University, Minneapolis......	1903	75
427	R.	Hamline University, Minneapolis.....	1900	89
429	R.	Hamline University, Minneapolis......	1903	85
432	R.	Hamline University, Minneapolis.....	1903	77
		FAILED.		
418	R.	Coll. of Phys. and Surgs., Keokuk, Iowa	1897	66
420	R.	College of Phys. and Surgeons, Chicago	1900	73
430	R.	Bellevue Hospital Medical College.....	1903	72
436	R.	Marion-Sims Medical College, St. Louis.	1903	*

* Only wrote on six subjects.

Marriages.

James F. Darnall, M.D., to Mrs. Ora Waters, both of Obion, Tenn.

Lemuel P. Adams, M.D., to Miss Elizabeth Leigh, both of Oakland, Cal.

Daniel Sigler, M.D., to Miss Mayme Bresler, both of Elwood, Ind., July 14.

James H. Finch, M.D., to Miss Helen M. Trevett, both of Champaign, Ill., June 10.

Robin W. C. Francis, M.D., Cincinnati, to Miss May Edith Schellinger of Chicago, July 4.

Walter Bernard Schwuchow, M.D., to Miss Jennie Isabel Gridley, both of Chicago, June 30.

Elmer Kline Avery, M.D., Chicago, to Miss May Francis Power of Escanaba, Mich., July 23.

Albert Mason Tyler, M.D., Oakdale, Mass., to Miss Alice Elizabeth Walker of West Boylston, Mass., July 15.

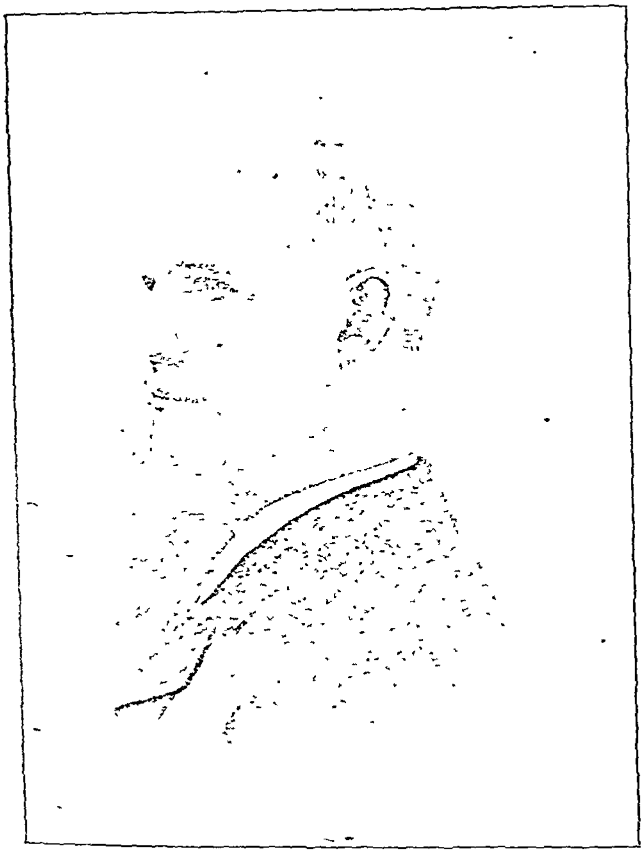
Eugene R. Hochstetter, M.D., Ridgedale, Tenn., to Miss Cleopatra Fleatsouth of Mission Ridge, Chattanooga, June 30.

Deaths.

Donald MacLean, M.D.

Dr. Donald MacLean, president of the American Medical Association in 1894, died from gastroenteritis, after an illness of two weeks, at his home in Detroit, Mich., July 24, aged 63.

He was born in Seymour, Ont., Dec. 4, 1839, of sturdy Scotch parentage. At the age of six he went to Edinburgh and attended school there for six years. He then returned to Canada and studied in Cobourg and Belleville schools; in 1855 he entered Queen's College, Kingston, where he remained two years. In 1858 he returned to Edinburgh for his medical studies, and four years later received the degree of M.B., C.M. and licentiate of the Royal College of Surgeons, Edinburgh.



DONALD MAC LEAN, M.D.

In January, 1863, he returned to America, and entered the Volunteer service as assistant surgeon, and remained for a year in the general hospitals at St. Louis, Harrisburg, Pa., Louisville, and New Albany, Ind.

In 1864 he accepted the chair of clinical surgery in the Royal College of Physicians and Surgeons, Kingston, and in the five years of his residence there acquired a large practice and gained a wide reputation as a teacher and writer. In 1869 he was obliged to resign on account of ill health, and spent three years in Edinburgh in rest and study.

He was made professor of surgery at the University of Michigan in 1872, and for seventeen years remained with that institution, resigning in 1889 on account of irreconcilable differences with the faculty, which opposed his plan of removing the clinical department from Ann Arbor to Detroit on account of the larger amount of clinical material in the latter city. He removed to Detroit and there built up a large practice.

In 1893 Queen's University conferred on him the honorary degree of LL.D., and a year later he was elected president of the American Medical Association. He was surgeon-in-chief for the Michigan Central and Grand Trunk railways and consulting surgeon at the Harper Hospital and Children's Free Hospital for twenty years.

He was a member of the Michigan State Medical Society, and its president in 1884; of the Detroit Medical and Library Association, and its president in 1887. He was also a member of the Royal College of Surgeons, London, and a Fellow of the Royal College of Physicians; and an honorary member of the state medical societies of Ohio and New York.

During the war with Spain he re-entered the service, and was commissioned major-surgeon, and assigned to duty at Old Point Comfort, Va.

He was a clear and forceful writer, and in addition to numerous contributions to the medical press, he was a collaborator with Mr. Symes in his great work on Surgery in 1884.

Dr. MacLean was a true Highlander, warm in his friendship and relentless in his hatred. He was a strong advocate of ethics and an uncompromising opponent of anything savoring of charlatanism, quackery or professional advertising. He was a stanch friend of the young practitioner, and his kindness to his patients and consideration for young practitioners won him hosts of friends.

He was at one time a bold and brilliant operator of the old school, but of late years his physical and mental condition had been such as to retire him almost completely from all kinds of labor.

Berthold Ernest Hadra, M.D. University of Berlin, Germany, 1866, surgeon in the Germany army in 1866; a resident of Texas since 1867; president of the Texas State Medical Association in 1901; one of the first regents of the University of Texas; and one of the founders of the medical department of the university at Galveston, died suddenly at his office in Dallas, July 12, from aneurism of the aorta, aged 58. At a meeting of the Dallas Medical and Surgical Society, July 14, committees on resolutions and floral tributes were appointed.

William J. Neilson, M.D. McGill University, Montreal, 1878, a member of the Manitoba Legislature; health officer of Winnipeg; one of the organizers of the Manitoba Medical College; gifted in his professional attainments, and highly esteemed in Winnipeg, died at the Winnipeg General Hospital, July 17, from lung disease of a year's standing, caused by a piece of gum, which lodged in the lung, for which an operation was performed without avail, aged 49.

Charles M. Galbraith, M.D. Barnes Medical College, St. Louis, Mo., 1897, assistant surgeon of the Fourth Illinois Infantry, U. S. V., in the Spanish-American War, and afterward captain and assistant surgeon of the Forty-Seventh U. S. Volunteer Infantry, died at his home in Carbondale, Ill., July 23, from tuberculosis contracted while in the Philippines, aged 31.

Herbert Mickle, M.D. Trinity Medical College, Toronto, 1881, of Buffalo, surgeon to the Emergency Hospital, demonstrator of anatomy in Niagara University and attending surgeon at the Sisters' Hospital, St. Francis Hospital, and the Church Home, died at Asheville, N. C., July 21, from tuberculosis, after an illness of two years, aged 42.

William Rittenhouse Hull, M.D. Pennsylvanja Medical College, Philadelphia, 1858, died at his home in Williamsport, Pa., July 17, aged 66. He was an honorary member of his state and county medical societies. During the Civil War he was assistant surgeon of the 171st Pennsylvania Volunteer Infantry.

William H. Parish, M.D. Jefferson Medical College, Philadelphia, 1870, professor of anatomy in the Woman's Medical College of Pennsylvania, and chief medical director of St. Agnes' Hospital, Philadelphia, died from heart disease, after a long illness, July 19, at Bilsey Lodge in the Adirondacks, aged 58.

James N. Dickson, M.D. Berkshire Medical College, Pittsfield, Mass., 1866, died at the Mercy Hospital, Springfield, Mass., July, 15, after an illness of two years, aged 60. He had practiced successively in Sheffield and Huntington, Mass., and for the last 20 years in Poquonock, Conn.

Samuel C. Hall, M.D. Eclectic Medical Institute, Cincinnati, 1869, St. Louis College of Physicians and Surgeons, 1892, an ex-member of the state legislature, a member of the American Medical Association, died at his home in Omaha, Ill., July 5, from pneumonia, aged 66.

Eugene Hodson, M.D. University of Maryland, Baltimore, 1856 died at Vienna, Md., July 10, from paralysis, aged 71. He was president of the Board of School Commissioners of

Dorchester County from 1872 to 1874, and in 1874 was elected to the house of delegates.

Simon C. Carver, M.D. Rush Medical College, Chicago, 1900, a member of the American Medical Association; for a time attending physician at the West Side Free Dispensary, Chicago, died from pneumonia, June 7, at his home in Chicago, after an illness of one week, aged 32.

Augustine Gattinger, M.D., one of the foremost botanists in the United States; surgeon in the Federal service during the Civil War; some-time state librarian of Tennessee, died at his home in Nashville, from pneumonia, July 18, aged 78.

J. B. Mitchell, M.D., surgeon of the Twelfth Tennessee Volunteer Infantry and the Fifth Kentucky Volunteer Cavalry during the Civil War, died at his home in Manhattan, Kan., July 2, from disease contracted during the war, aged 71.

Edward Vanderpoel Armstrong, M.D., passed assistant surgeon (lieutenant junior grade) U. S. Navy, retired, died at his home in Mount Vernon, N. Y., July 16, after a long illness from fever contracted in the tropics, aged 30.

William Goehrig, M.D. Philadelphia University of Medicine and Surgery, 1861, coroner of Lycoming County, Pa., surgeon of the Ninety-eighth Pennsylvania Infantry in the Civil War, died from acute gastritis, July 12, aged 71.

J. Ernestine Hills, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1893, physician at the Willard (N. Y.) State Hospital for the Insane, died suddenly at that institution from uremia, July 11, aged 41.

Charles A. Helvie, M.D. Rush Medical College, Chicago, 1894, died from the effects of chloroform self-administered, at his room in Los Angeles, Cal., July 10. He recently moved from Havelock, Neb., to California.

Harden E. Bozman, M.D. Dartmouth Medical College, Hanover, N. H., 1882, of New Alexandria, Ohio, died suddenly from apoplexy, July 6, while engaged in an obstetrical case, near Mingo, aged 45.

Isaac N. F. Beegle, M.D. Bellevue Hospital Medical College, 1870, a pioneer resident of Ocean Grove, N. J., died at his home in that place, from dropsy, July 20, after an illness of two years, aged 56.

Russell J. Collins, M.D. Berkshire Medical College, Pittsfield, Mass., 1850, a surgeon in the U. S. Army during the Civil War, died suddenly at his home in Georgetown, Colo., July 17, aged 75.

Francis Marion Perine, M.D. University of Buffalo, 1855, coroner of Livingston County, N. Y., for 21 years, died at his home in Dansville, July 12, after an illness of several months, aged 72.

H. H. McLellan, M.D. Medical College of Ohio, Cincinnati, 1880, formerly of St. Mary's, Kan., died at his home in Topeka, Kan., July 19, suddenly, from heart disease, aged about fifty.

F. A. Malick, M.D. Iowa College of Physicians and Surgeons, Des Moines, 1890, died at his home in Fullerton, Neb., July 17, from heart disease, after an illness of nearly a year, aged 36.

Gordon Herbert Race, M.D. Albany (N. Y.) Medical College, 1880, died at his home in Great Barrington, Mass., July 22, from heart disease, after a lingering illness, aged 50.

Andrew J. Clark, M.D. New York Homeopathic Medical College and Hospital, 1866, was fatally injured in a runaway accident at his home in Loveland, Colo., July 13, aged 74.

Alexander E. Jenner, M.D. Bellevue Hospital Medical College, New York, 1863, died at his home in Dayton, Ohio, July 12, after a long period of invalidism, aged 74.

William Preston Dowling, M.D., surgeon in the Confederate service during the Civil War, died at his home in Charleston, S. C., July 11, after a short illness, aged 70.

Alfred A. Gerish, M.D. New York Medical College, 1853, reputed to be the oldest practitioner in Indiana, died at his home in Lowell, Ind., July 17, aged 85.

James D. O'Keeffe, M.D. College of Physicians and Surgeons, Baltimore, 1873, of Tazewell, Va., died at Pulaski, Va., suddenly from heart disease, July 24.

Annie Lowe Geddes, M.D. New York Medical College and Hospital for Women, 1890, of Montclair, N. J., died from cancer, July 15, at Plainfield, N. J.

Richard R. Pettitt, M.D. University of Michigan, Ann Arbor, 1882, died at his home in Dayton, Ohio, July 9, from tuberculosis, after a long illness.

George Chappell Crawford, M.D. Long Island College Hospital, Brooklyn, 1894, died at his home in Brooklyn, July 13, after a brief illness, aged 34.

Henry A. Goodale, M.D., an old practitioner of Bay City and East Tawas, Mich., died at his home in the latter city, July 16, aged 81.

John E. Stanton, M.D. University of Pennsylvania, of Philadelphia, died at the Municipal Hospital in that city, July 11, from smallpox.

William Knight Adams, M.D. Hahnemann Medical College, Philadelphia, 1902, died at his home in Philadelphia, July 17, aged 23.

Thomas V. Loftus, M.D. University of Pennsylvania, Philadelphia, 1901, died at the Scranton Private Hospital, July 2, aged 26.

Olin G. Dyer, M.D. Castleton (Vt.) Medical College, 1844, died at his residence in Brandon, Vt., July 20, after a lingering illness.

Elias A. Howe, M.D., 1869, died at his home in Brancroft, Iowa, July 12, from Bright's disease, after a long illness.

Ebenezer E. Hyde, M.D. Castleton (Vt.) Medical College, died at his home in Belmont, N. Y., July 4, aged 84.

E. R. Dabney, M.D. New York University, 1845, died at the home of his son in Ringgold, Tenn., July 9, aged 78.

John Clarence Morgan, M.D. New York University, 1875, died recently at his home in Pompton Lakes, N. J.

Deaths Abroad.

Dr. Moritz Jacob Simon died of cerebral hemorrhage at his home at Gnesta, Sweden, June 27, aged 56 years, while making ready for a professional call. He had for many years been a member of the Board of the Association of the Provincial Physicians of Sweden, and at the same time its secretary. He was very much interested in public hygiene, an active worker for professional unity, and a faithful defender of the rights of the medical profession. Since 1898 he has been editor of *Eira*, a bi-monthly medical journal devoted largely to the interests of the country practitioners of Sweden and pro tempore also organ for Svenska Läkaresällskapet (the Swedish Medical Association).

Book Notices.

A Treatise on Diseases of the Anus, Rectum and Pelvic Colon. By James P. Tuttle, A.M., M.D., Professor of Rectal Surgery in the New York Polyclinic Medical School and Hospital. With 8 Colored Plates and 338 Illustrations in the Text. Cloth. Pp. 961. Price, $6.00. New York: D. Appleton & Co. 1902.

This volume of nearly 1,000 pages is the most comprehensive of the recent treatises that have appeared on this subject. The opening chapters are devoted to a consideration of the embryology, anatomy, physiology and malformations of the parts, to which nearly 100 pages are devoted. Methods of examination and diagnosis are then taken up, followed by a detailed description of the various pathologic conditions. A noticeable, at the same time excellent, feature of the work is the detail with which the author describes the treatment, whether operative, medicinal or hygienic. Nothing is left to be supposed, and no point which the author thinks may have a bearing on the case has been deemed too small to merit his attention. While this undoubtedly adds considerably to the size of the volume, it is a good fault, for success or failure often depends on some apparently unimportant detail of technic.

The general literature of the subject has been very well covered, and the methods of others receive proper consideration, but the author does not hesitate to say which particular method has given the best results in his own hands.

The illustrations are good and diagrammatic enough to give one a clear conception of the ideas intended to be conveyed. Most of them are new, yet occasionally one has perhaps been taken without due credit being given.

On the whole the book is a good one, and can be recommended to all who work in this line.

The Geography of Disease. By Frank G. Clemow, M.D. Edin., D.P.H. Camb., British Delegate to the Ottoman Board of Health. Cloth. Pp. 624. Price, $4.00. Cambridge: University Press. New York: The Macmillan Company. 1903.

This work, which is one of the Cambridge-Geographical Series, is an interesting and valuable little summary of the geography of disease. It is based on reliable information from a vast number of sources, and the author has evidently gone over the literature thoroughly. So far as we are able to observe, his statements are generally correct. It is a curious thing to notice how many formerly serious and prevalent diseases have been of late years reduced in frequency and fatality in some civilized countries, while a few have evidently increased. The modern increase of pneumonia is not fully noticed, though from the date of the work we should think it would include this fact. The author's remarks that tetanus is not apparently common in the United States would seem to need some modification at the present time. The work is illustrated by maps showing the prevalence of certain diseases and their routes of transmission which are graphic and instructive. It is a valuable addition to what we might call semi-popular medical literature, which can not fail to also be of use to physicians.

TUBERCULOSIS: Recast from Lectures Delivered at Rush Medical College, in Affiliation with the University of Chicago. By Norman Bridge, A.M., M.D., Emeritus Professor of Medicine in Rush Medical College. Cloth Pp. 302. Price, $1.50 net. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

This volume contains the substance of the lectures delivered by the author in Rush Medical College during the past three years, and is a summary of his wide experience in the treatment and control of tuberculous patients. The lecture form style is retained. We have seen few treatises on this disease that are more interestingly placed before the reader than this. Dr. Bridge's ideas in some respects have been criticised, especially those on lung gymnastics, etc., but we see nothing in this volume that would call for unfavorable criticism. It is an excellent little handbook of tubercular disorders, and complete in its description.

Miscellany.

Tuberculosis Fakers.

On the subject of our editorial, July 18, we quote the following from the *Medical News:*

The following from the *Herald* is worthy of preservation in medical literature as illustrating the methods of many similar institutions:

When the prosecution is ready to act in suppressing the many so-called "Koch" cure establishments purporting to be affiliated with Prof. Robert Koch, the distinguished German tuberculosis expert, but which he has expressly repudiated no less than thirty times in letters sent to representative men in America, a mass of testimony will be ready. In addition to the data already prepared for the counsel of the County Medical Society, which has been investigating these so-called "Koch" lung cure concerns for nearly two years, it was learned last week that a former nurse at the West Twenty-second street establishment, who has also had experience at several other branches, has volunteered to tell some astonishing particulars about the manner of conducting business in these "consumption parlors."

This woman is now employed at a hospital in this city. She first entered the employ of the so-called Koch Lung Cure Company in Philadelphia, where a sort of training school for nurses is maintained by the parent office. Then she went to the Rochester establishment. Here is what she said when asked about her experience there:

"I had charge of the business department there. I received the patients when they first came to the office; I placed the advertisements, prepared the tuberculin and was the general supervisor of the office. I kept the books and banked the money most of the time."

"What was the treatment that was adopted in that office during the time you were there in charge?" she was asked.

"We got the tuberculin from the Koch Lung Cure office, No. 150 Nassau street, in little bottles containing about an ounce. This was used with six ounces of albolene. The albolene was colored for the consumption cases and bronchitis, and the tuberculin that was used for asthma was plain white. We used alkanet root for coloring."

"How many patients were cured at that place?"

"None."

"How many ever gave testimonials as to being benefited or cured?"

"I think we got three who said they had been benefited, but never any that were cured."

This nurse was then asked about a letter which she said she had written by the direction of Wallace Cleveland Clark, M.D., the head of this particular so-called Koch Lung Cure Company, running as follows:

"We are interested in your case and want you to get well. We are glad to say that, through the generosity of a wealthy lady, whom we have cured, certain money has been placed at our disposal to assist deserving cases to take our treatment. Call soon, as we are making this same offer to others, and it will be a case of first come first served. Respectfully,

"K. L. C."

"What does 'K. L. C.' stand for?"

"The Koch Lung Cure."

"Was that the way Dr. Clark directed you to write the letter?"

"Yes."

"Do you know whether or not a generous lady, or any lady, was cured by the Koch lung cure and had deposited a sum of money for the purpose of benefiting other sufferers, as stated in this letter?"

"I can say positively that I know no wealthy lady was cured in Rochester and that there was never a dollar deposited for any such charitable purpose."

"What would you say basing your statement upon your experience with the company while you were in its service, and from your observation, is the main object of the company in its advertisements?"

"To get money, to get rich, and absolutely nothing else."

"From what you know of your own knowledge concerning the company's mode of treatment and sale of medicine and general advertisements, would you state whether or not there is any virtue in its treatment and if it does humanity good or relieves the sick and suffering from consumption?"

"I would not take it myself."

"What do you say generally, based on your experience?"

"I do not believe that it is any good."

Besides the testimony of this nurse, who has been in consultation during the last few days with Mr. Champe S. Andrews, the counsel for the New York County Medical Society, the method of the spurious "Koch" companies in obtaining testimonials has been investigated.

Here are extracts from a letter sent to a woman in Washington, D. C., signed W. C. Clark, the president of the concern:

"Dear Madam: You are probably aware of the fact that your testimonial has been inserted in the papers, and we realize that you are put to considerable trouble in answering letters and inquiries that come to you about your cure.

"Should any one desire to have you call and see them at their home and you can spare the time, we would be very much pleased to have you do it. Of course, a dollar would be a very small fee for such a visit and we would be very glad to pay it. . . .

"Kindly instruct us to answer them (the letters) for you and we will simply state that your case was cured, as stated in the testimonial. I believe that is all that is necessary. Hoping that you will take this in the spirit in which it is sent and will allow us to at least give you the amount that you would otherwise earn for the same amount of time given, I mean, twenty cents per letter and twenty cents for each inquiry. I remain, very sincerely yours, W. C. Clark."

This adroit scheme to obtain many alleged testimonials is said to have had an odd sequel, which may be brought out in the crusade of the County Medical Society against these impersonators of the German tuberculosis investigator.

Medical Organization.

Van Buren County (Iowa) Medical Society.

The physicians of Van Buren County met at Keosauqua, July 9, and effected preliminary organization of a county medical society.

Page County (Iowa) Medical Society.

Physicians of Page County met at Coin, June 25, and organized a county medical society, with the following officers: Dr. John A. Gillespie, Coin, president; Dr. Robert J. C. Dodds, Blanchard, vice-president, and Dr. Charles F. Perkins, Shenandoah, secretary and treasurer.

St. Landry Parish (La.) Medical Society.

Physicians of St. Landry parish met at Opelousas, July 10, and organized a parish medical society with the following officers: Dr. Benjamin A. Littell, Opelousas, president; Dr. Ladis Lazarro, Washington, vice-president; Dr. William R. Lastrapes, Opelousas, secretary, and Dr. William R. Boudreau, Washington, treasurer.

Grand Forks County (N. D.) Medical Society.

Thirty physicians of Grand Forks County met at Grand Forks, July 8, and organized a county society with the following offices: Dr. John D. Taylor, Grand Forks, president; Dr. Herbert W. Matthews, Emerado, vice-president; Dr. Henry H. Healy, Grand Forks, secretary, and Dr. Robert D. Campbell, Grand Forks, treasurer.

Lafayette Parish (La.) Medical Society.

At a meeting for organization held at Lafayette, July 11, this society was formed; a constitution and by-laws on the lines suggested by the state and National associations adopted, and the following officers elected: Dr. Jean P. Francez, Carencro, president; Dr. John D. Trahan, Lafayette, vice-president, and Dr. Felix E. Girard, Lafayette, secretary and treasurer.

Jefferson County (Texas) Medical Society.

Pursuant to call, the physicians of Jefferson County met at Beaumont, July 19, and organized a county medical society, and adopted a constitution and by-laws in conformity with those of the state and National associations. Dr. William W. Cunningham was elected president; Dr. Louis Goldstein, vice-president; Dr. Guy H. Reed, secretary and treasurer, and Dr. Henry A. Barr, delegate to the state medical assocation.

New Hanover County (N. C.) Medical Society.

On July 6 Dr. Frank H. Russell, Wilmington, councilor for the Third District, met with the physicians of the county at Wilmington and completed the organization of the society. Dr. Thomas S. Burbank, Wilmington, was elected president; Dr. John T. Schonwald, Wilmington, vice-president, and Dr. E. J. Wood, secretary. Drs. William D. McMillan and Andrew H. Harriss, Wilmington, and S. E. Koonce, Polloksville, were elected censors.

Russell Springs (Ky.) Medical Society.

The president, Dr. James G. Carpenter, Stanford, councilor for the Seventh District, announces that this society will meet August 13 and 14; that at this time the Adair and Russell County Medical societies will be organized, and closes with the following invitation: "Let everybody come and bring his rifle and fishing tackle. Rattlesnakes are sufficiently numerous in this section of the country for each member to supply himself with the necessary antidotes before he leaves home."

Hunt County (Texas) Medical Society.

Dr. Charles E. Cantrell, Greenville, councilor for the North Texas District, met the physicians of the county at Greenville, July 7, and assisted in the organization of the county medical society under the jurisdiction of the state and National associations. Dr. Walter C. Welch, Caddo Mills, was elected president; Dr. Thomas J. Milner, Greenville, vice-president, and Dr. Milus L. Moody, Greenville, secretary-treasurer. Drs. Thomas E. Spaulding, Greenville, W. B. DeJernett, Commerce, and Garnett, were elected censors.

Monona County (Iowa) Medical Society.

Physicians of Monona County met at Onawa, July 1, and with the aid of Dr. Edward Hornibrook, Cherokee, councilor for the Eleventh District, organized a county medical society on the lines suggested by the state and National organizations. Dr. John W. Huff, Onawa, was elected president; Dr. Rueben Harmon, Onawa, vice-president; Dr. E. E. Fisher, Rodney, secretary, and Dr. Archillous A. West, Moorhead, treasurer. Drs. A. J. Moore, Onawa, W. W. Gingles, Castana, and John D. Kerlin, Whiting, were elected censors.

Dallas County (Texas) Medical Society.

Pursuant to call of Dr. Charles E. Cantrell, Greenville, councilor for the North Texas District, physicians of Dallas County met at Dallas, July 11, organized a county medical society, adopted the constitution and by-laws prepared by the American Medical Association, and elected the following officers: Dr. Vene P. Armstrong, Dallas, president; Dr. Alva W. Carnes, Hutchins, vice-president; Dr. Elbert Dunlap, Dallas, secretary; Dr. John C. Armstrong, Garland, treasurer, and Drs. W. W. Samuell, Frank J. Hall, and Jesse B. Titterington, Dallas, censors.

Societies.

Medical Society of the Missouri Valley.—The annual meeting will be held in Omaha, September 17.

Jasper County (Iowa) Medical Society.—At the annual meeting in Newton, July 16, Dr. Louis S. C. Turner, Colfax, was elected president; Dr. F. L. Smith, vice-president; and Dr. Harry P. Engle, Newton, secretary and treasurer.

Southwestern Minnesota District Medical Society.—At the thirtieth semi-annual meeting held in Windom, July 16, Jackson County was added to the jurisdiction of the society, which formerly included five counties—Rock, Pipestone, Murray, Nobles and Cottonwood.

Stephenson County (Ill.) Medical Society.—The following officers were elected at the annual meeting held in Freeport, July 9: Dr. Jeremia H. Stealy, Freeport, president; Dr. Daniel B. Bobb, Dakota, vice-president; and Dr. Robert J. Burns, Freeport, secretary and treasurer.

Henry County (Iowa) Medical Society.—At the annual meeting held in Mount Pleasant, July 14, Dr. James M. Evans, Salem, was elected president; Dr. Charles W. Gardner, Winfield, vice-president; and Dr. William S. Lessenger, Mount Pleasant, secretary and treasurer.

Denton County Medical Association.—At the annual meeting, July 7, held in Denton, the following officers were elected: President, Dr. Franklin U. Painter, Pilot Point; vice-presidents, Drs. Milton C. McBride, Denton; George G. Agerton, Argyle, and Curvier Lipscomb, Denton; secretary, Dr. Melvin L. Martin, Denton, and treasurer, Dr. James B. Honeycutt, Denton.

Association of Assistant Physicians in the Ohio State Hospitals.—At a meeting called at Columbus, July 16, this association was organized with a charter membership of 25. The following officers were elected: President, Dr. George T. Hardin, Jr., Columbus; vice-president, Dr. James F. Kelly, Cleveland; secretary, Dr. Isabel A. Bradley, Columbus, and treasurer, Dr. Nelson H. Young, Toledo.

Lehigh Valley Medical Association.—At the twenty-third annual meeting held in Stroudsburg, Pa., July 16, the following officers were elected: President, Dr. Frederic Corss, Kingston; vice-presidents, Drs. John T. Howell, Wilkesbarre, E. H. Deckinshied, Nathaniel C. Miller, Stroudsburg, and C. B. Smith; Dr. Charles McIntire, Easton, secretary; Dr. W. B. Walker, assistant secretary, and Dr. Abraham Stout, Bethlehem, treasurer. The next session will be held in Allentown in January, 1904.

Tri-State Medical Association of Western Maryland, West Virginia and Western Pennsylvania.—This society met at Cumberland, Md., July 16, and elected the following officers: President, Dr. Martin F. Wright, Burlington, W. Va.; vice-presidents, Drs. James O. Bullock, Lonaconing, Md.; A. B. White, Connellsville, Pa., and Edwin K. Wilson, Romney, W. Va.; recording secretary, Dr. Percival Lantz, Alaska, W. Va.; corresponding secretary, Dr. Frederick W. Fochtman, Cumberland, Md., and treasurer, Dr. Henry W. Hodgson, Cumberland, Md.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Minutes of the Thirteenth Annual Meeting, held at New Orleans, May 4, 1903.

(*Continued from page 275.*)

Report of Committee on Revision of Constitution as to the Standard of Admission.

Dr. Wm. H. Wathen, Louisville, Ky., presented the following as a minority report:

MINORITY REPORT.

MINIMUM REQUIREMENTS FOR ADMISSION TO A MEDICAL COLLEGE.

In adopting a standard of minimum educational requirements for admission to the freshman year of a medical college, to govern the members of an Association representing the entire country, the college being a department of a university, or in affiliation with a university, or with no university connection, it is necessary that concessions be made, so as to agree on what is best in the interest of the greatest number of reputable medical colleges, and in obtaining the best results in the prevention and cure of disease. A standard too high may be as harmful as a standard too low, by excluding from the medical profession men of the best minds, who are deprived of the cultural training in a large and expensive university; hence, to adopt a universal requirement of a baccalaureate degree from a recognized college or university for admission to a professional school would alike be at this time an injustice and injury to the profession and the people. Therefore, we must philosophically consider the conditions that underlie and control the educational system in this country leading up to the admission to the university and professional school, for these conditions differ radically from what pertains in other civilized countries. In England, Germany, France and other European countries, the free public school system does not offer opportunities for an education higher than that obtained in the six or eight years of our best primary and intermediate schools, and the few who are permitted to pursue their studies in the secondary or so-called high schools, are confined to the wealthy and aristocratic class, or to the well-to-do people of the middle class who are able to pay fees. Our system offers to any one a continuous course averaging from ten to twelve years from entering the primary school to the college or university, while in Germany the peoples' schools are intended primarily for the low and middle classes, and have little connection with the high schools which prepare students for the university. In Italy the connection between the elementary and secondary school is apparently closer than in Germany, but practically the reverse is true, for 90 per cent. of the children never pass beyond the third year's course of the primary schools.

In France, because of the fees charged, and the difference in organization and purpose of the two classes of schools, the graduates from the primary schools (écoles primaires élémentaires) seldom enter the high schools (lysées and colleges). The same is practically true in Switzerland, and apparently the same reasons keep down the number of secondary schools. In Zurich, where the conditions of advancement are exceptionally good, of 1872 graduates of the primary school in 1899, only 482 entered the secondary school, and probably but few of these were able to complete the course. The board schools of England, which are for, and attended by, the masses, are entirely different in spirit and in purpose from the public and grammar schools which prepare students for the university. Stimulated doubtless by the privileges and results of our public system of education, England has organized higher grade elementary schools, which may have a course of four or five years longer than the lower schools; and Germany has similarly sought to supplement the work of the primary schools by establishing real schools and higher burgher schools, but in none of these schools is either Latin or Greek taught, and the courses do not lead up to the university; the same is true in results in the higher primary schools (écoles primaires supéreures) of France.

While our system in its inception may have been in a degree fashioned after foreign models, and the establishment of our system of elementary education influenced by the description of European schools, by Mann, Stowe and Barnard, the difference between the American and European schools in organization and methods is now so great that in many features we can not and should not resemble those schools. We may in the future, as we have in the past, gain much from foreign schools, and foreign literatures, but our highest ideals must result from indigenous influences, truly American, and not ideals or practices found elsewhere.

The success claimed in the fixed courses in the German high schools in large cities to show the unwisdom of our elective courses is not sustained by facts, for in each of those cities there are several high schools whose curricula differ as widely as the various courses in a high school with us. It must also be remembered that the lycée of France and the gymnasium of Germany are intended for the few who may obtain a liberal education, while our schools supply the needs of all.

It will thus be conceded that in European countries but few pupils can be properly educated for admission to professional schools except through colleges and universities, while in the United States they can be well prepared in our free public schools. But as the curricula in our primary, intermediate and secondary schools differ, not only in various states, but even in the different schools of each state, both in time and in amount and character of work required, we should, in accepting a high school diploma as a minimum qualification for admission, correctly understand and determine the time-requirement, and in a general sense the amount and character of education given—being liberal in the allowance of electives. In view of the fact that most of our states and cities in which the public school system is encouraged and fostered require attendance upon twelve years of not less than forty weeks each from the beginning of the primary to the completion of the secondary course, the Association should finally expressly provide that the diploma of no high school obtained in less time shall be accepted as a minimum requirement for admission to a medical school. The high school can never offer fixed, or even elective courses to especially prepare the pupils for the several professional schools, nor can this be completely done in our universities, unless those studies properly belonging to the academic and scientific department be subordinated to studies that have usually been included in the professional schools, and should be retained, if we are to have any unit of measure for the baccalaureate and professional degrees.

In this process of rapid evolution in education to meet modern demands, the regulator necessary for perfect results has not worked with entire precision, having permitted the destruction or injury of many cherished precedents that time must restore, and made innovations that time must destroy. This applies especially to our well-known universities in their desire to shorten the period of university residence, by the substitution of professional work for the time-honored purely academic work; the work of the senior year, and in the University of Chicago in the two years of the senior college, being mainly professional, the pupil receiving the baccalaureate degree and advancing the sophomore or junior year of the four years' professional school, thus obtaining the baccalaureate and professional degree within six or seven years, each degree indicating that it had been obtained after attendance on four years of academic or professional work. It is also possible for a pupil whose qualifications will admit him to the junior year of the university to obtain in five, and in the University of Chicago in four years, both the baccalaureate and professional degree. This is no captious criticism, but a desire to direct attention to a heterogeneous condition, inconsistent with all classical conceptions of a university proper, and which the philosophic deductions of our most distinguished teachers and scholars will eliminate. It is especially the province of the university to teach the science and art of education, its history and methods, and create a demand for more thorough professional training: It should produce a succession of scholars in philosophy and literature, but it is not required to supply practitioners in the professions; for if the university observes its purest ideals, the professions will take care of themselves.

The degree of perfection in the work in primary and secondary schools, academies and colleges, may be measured by the perfection of the classical work done in the university, for as the sun gilds the mountain tops before its light floods the plains, so must educational progress spread from the summits, for the secondary schools receive their inspiration from the classical university, and will be what the university makes them. With the proper stimulus and encouragement of the university, the secondary schools may finally complete the work of the freshman and sophomore years, thereby reducing the university residence to six years in obtaining the baccalaureate and professional degree—thus eliminating the combined academic-professional course, and giving a unit of measure to both degrees.

In our effort to adopt the best method of education preparatory to the study of the professions, we often confound culture with instruction, and wisdom with knowledge, forgetting that culture is to quicken, strengthen and enrich the mind, while instruction furnishes the mind with knowledge, which may be abundant, but of little value unless utilized by wisdom to obtain the most perfect results which may redound to the greatest interest of humanity. Wisdom and knowledge are not identical, but related, and the latter can not be possessed without a degree of the former. Knowledge comes from without; wisdom lies within, but by cultivation may become comprehensive and powerful. Much knowledge may be worthless unless directed by the guiding-star of wisdom. Knowledge is the material out of which we construct the beautiful palace, but wisdom is the architect who combines this material in harmonious relation, resulting in architectural perfection. Then while in our preparatory education leading up to the study of the professions, let us educate the mind to think rightly and wisely. We should encourage the study of the classics—English, Mathematics and the Sciences—but we should teach the mind how to digest, assimilate and appropriate the accumulated facts; otherwise there may be much knowledge with little wisdom, and no useful results. Teach the student the *various channels* and mechanisms by which knowledge *may* be *obtained*, and the mental processes by which it may be directed and utilized to attain the greatest perfection and usefulness. Teach him philosophy—embracing psycology, logic and ethics—and in a general sense the history of phil- and usefulness. Teach him philosophy—embracing psychology, *of Socrates. Plato and Aristotle,* the Pagan philosophy of Rome, and finally through the various ages, to Abelard, Descartes. Kant and others equally worthy.

The study of too much mathematics, as also some of the collateral sciences, should be discouraged, and the time may better be consumed in a careful study of English, and Greek and Roman history, and in the life and growth of language, especially of the philology of the *languages* that *may* be traced to an Aryan or Indo-European origin.

Of all languages except our native tongue, the study of Latin is of greatest value, and excluding the commercialism of *German* and French, Greek should be next in order, for even an imperfect knowledge of these two languages will enable the student to easily understand the etymology of the many compound technical terms in the study of *medicine, which a knowledge* of no other language will do. German can *never be of much value in* the study of the rich scientific literature of that language, unless it can be read with ease and correctly translated, and this can not be done by the American student of four years' study of five hours a week in our high schools. Again, in the near future, all that France or Germany may discover or develop, if of real value, will be promptly given to us in a translation, by scholars educated in German or French, English and the sciences; and even to-day we find many such translations in libraries throughout the country. Far be it from me to discourage the value of German and French, and the great richness of their literatures, but to be of value to the student in medicine, the languages *must* be read with ease, *otherwise the meaning* may not be correctly understood, for the understanding of the text must be measured by the translation. The average student in German who *graduates from* our high schools *may* read German with comparative ease in the text-books in *prose* and *poetry*, but he can not read with ease books *on* technical and scientific *subjects*, and to do so at *all*, he must constantly refer to his lexicon and make slow progress. This is true of our high schools in Louisville, with teachers acknowledged to be equal to any in the country, the course being four years of ten months each, five hours a week. This is also true *in the state of New York*, as will be seen in the *following extract from a recent letter* from Prof. Charles R. *Skinner*, state superintendent of department of public instruction: "Graduates from our high schools do *not*, as a *rule*, read with ease the German and French languages."

My information from extensive correspondence indicates similar results in the various states. Of course pupils of German parentage, or of special excellence may read and write the German language with ease. It must also be remembered that German is a required study in but few of our high schools, and in many of them is taught but two years; therefore, in adopting a minimum requirement for admission to medical college, neither German or French should be demanded, but should be encouraged as electives. Then let us adopt but few fixed subjects in our examinations for admission to a medical college, but many electives from which *selection may* be made, requiring one-third, or about seven out of twenty-one. In accepting a baccalaureate degree for admission, we are forced to acknowledge that it is meaningless, has no significance, and indicates nothing if conferred by *the majority* of our *so-called* academies, colleges and universities, and who is to sit *in judg*ment to separate the chaff from the wheat, the bad from the good, the sinner from the saint? as all *claim* equal virtue. Then if this be true in accepting a baccalaureate degree *for* admission, the evil will be far greater in giving advanced standing or time-credits for such degree. So let us urge on this Association to give no time-credits for work done, except in a recognized medical college, and to insist on a discontinuance of the combined *academic and professional courses. If this* can not be accomplished now, it will be in the very *near* future, for the evolution is *rapid* in that direction, as indicated in the subjoined letters from the officers of the academic and arts department, and the medical department of Harvard, Johns *Hopkins, Yale*, Cornell, Columbia, *etc. None* of these universities gives time-credits for a baccalaureate degree, and Harvard and Johns Hopkins have no combined academic and professional courses, and I am sure neither Columbia, Yale or Cornell will have after a few years, for they encourage their students to attend four years of purely medical college work. The combined course was the child of necessity, to meet the demands for a shorter university residence, the medical profession refusing to recede from the requirement of attendance on four years purely medical work. As it is hardly possible to increase the university residence, the academic and arts course must be finally reduced to three, and possibly to two years, which may be done without lowering the standard by requiring applicants for admission to have done the work that has previously been included in the freshman, or both freshman and sophomore years. The secondary schools will then teach more months and more hours, with a better system and more condensed work, eliminating all that a broader experience proves to be unnecessary. The student may then graduate in medicine when he is twenty-three, twenty-four or twenty-five years old; ten to twelve *years in* the primary, intermediate and *secondary department*, two to three years in the college, and four years in medicine.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns *without* allusion to inquirer.]

Prophylaxis and Treatment of Baldness.

Dr. Albert Bernheim, in an article in *Amer. Med.*, states that the greatest hindrances in stopping the falling out of the hair are the indifference and impatience of the patient and the physician. In his opinion brain work is not a causative factor of baldness, as *is the* exclusion of light and air from the hair. He outlines his treatment as follows: 1. *Time.* 2. Patience. 3. Tar soap containing 40 per cent. of birchwood tar or beechwood tar to 60 per cent. of the soap mixture.

The scalp should be shampooed with this soap every day for at least eight weeks. The shampooing must occupy not less than ten minutes. The soap should then be washed *off* with warm water, the hair and scalp well dried by patting with tissue paper or paper napkin; it must not be rubbed dry.

4. The following should then be rubbed on the scalp:

℞. Sol. hydrarg. chloridi corros. (1 to 300)
Glycerini
Spts. *cologne*, āā ....℥iiiss 100

M. Ft. solutio. Sig.: Apply locally with soft woolen tissue and rub for five minutes.

After this application, rub the scalp dry with the following solution:

℞. Beta naphthol ....gr. xv 1
Alcoholis (absolute) ....℥vii 210

M. Sig: Apply locally.

This should be followed by applying freely the following:

℞. Acidi salicylici ....ʒss 2
Tinct. benzoin ....m. xlv 3
Olei (neatsfoot) ....℥iiiss 100

M. Sig.: Rub the scalp thoroughly for five minutes.

The soap solution is employed to remove all dust which may adhere to the scalp. The sublimate stimulates the growth of the hair. The naphthol mixture dries the scalp and removes the fatty substances and aids in absorption of the oil. The purified neatsfoot oil is supposed to be better absorbed than the vegetable oils. The author states that lanolin may be substituted if desired. Good results have been obtained in the treatment of alopecia areata in a similar manner.

In alopecia due to syphilis the following combination has been advised by Besnil:

℞.	Olei cadini	m. xlv	3	
	Sulphuris precip.	gr. xv	1	
	Resorcin	gr. ivss		30
	Acidi salicylici	gr. iiss		15
	Adipis benzoinati	℥i	30	

M. Ft. unguentum. Sig.: Apply locally.

Lyon. in *Progrès Méd.*, recommends the following in the treatment of baldness:

℞.	Quininæ sulph.	gr. xv	1	
	Olei theobrom.			
	Olei ricini, āā	ʒiv	15	

M. Ft. unguentum. Sig.: Apply locally; or:

℞.	Tinct. cantharidis	ʒiiss	10	
	Acidi acetici	gtt. xv-xxx	1.-2	
	Pilocarpinæ hydrochlor.	gr. viiss		50
	Glycerini	ʒvi	24	
	Eau de Cologne	℥vii	210	

M. Ft. lotio. Sig.: Apply locally with thorough friction.

Diabetic Coma.

According to an abstract in *Medicine*, Arthur R. Elliott states that prophylaxis is of the first importance. According to the author there are signs, preceding by several days the development of coma, which may be developed by examination of the urine. Acetone is the first to appear, later diacetic and oxybutyric acids. These may be detected by adding a solution of ferric chlorid which produces a wine-red color. If this reaction is present, the patient should avoid cold and fatigue. Elimination should be promoted, and the patient instructed to drink water freely. Colonic flushings and laxatives should be given. Previous to development of coma, sodium bicarbonate should be given in large doses. If coma occurs the patient should be put to bed and stimulants administered and the bowels evacuated. Alkalies should then be administered, using sodium bicarbonate hypodermically with the normal saline solution, also given per rectum.

In very severe cases a solution made up as follows should be injected into the venous circuit:

℞.	Sodii bicarb.	ʒiiss	10
	Sodii chloridi	ʒiss	6
	Aq. destil.	Oii	900

M. Sig.: To be injected into the venous circuit or beneath the skin.

Lecithin in Tuberculosis.

Bernheim, according to *Merck's Archives*, recommends lecithin administered hypodermically and combined with guaiacol as follows:

℞.	Lecithin		
	Guaiacol, āā	gr. xv	1
	Olei olivæ (washed in alcohol and sterilized)	ʒiiss	10

M. Sig.: Inject 15 to 30 minims (1.-2.) every other day.

Ichthyol in Chronic Bronchitis.

De Brun, according to an abstract in *Ther. Gazette*, recommends the use of ichthyol internally in the treatmtent of chronic bronchitis. It is given in daily doses of fifteen grains, made up in pill form. He reports excellent results in diminishing the cough and giving the patient rest. The dyspnea rapidly disappears and the râles over the chest decrease in number. This preparation may be given in the liquid form combined as follows:

℞.	Ichthyol	gr. xxx	2
	Glycerini		
	Syr. aurantii, āā	℥ss	15
	Aquæ q. s. ad	℥iii	90

M. Sig.: One half to one teaspoonful several times a day in water.

Chlorosis with Phlebitis.

Carrière, according to the *N. Y. and Phila. Med Jour.*, recommends, in the treatment of phlebitis complicating chlorosis. that the patient be put to bed and the affected limb immobilized, after wrapping it in cotton, for thirty days. Locally, along the course of the inflamed vein, the following is applied:

℞.	Olei hyoscyami		
	Spts. chloroformi, āā	ʒiiss	10

M. Sig.: Apply locally.

In the treatment of the chlorotic condition a rich diet is prescribed and the following combination given internally:

℞.	Ferri oxylatis	gr. ii	12
	Magnes. carb.		
	Pulv. gentianæ, āā	gr. iv	25
	Pulv. rhei	gr. iii	20

M. Ft. capsulæ No. ii. Sig.: Two such capsules at one dose and repeated twice daily before meals.

In order to hasten the absorption of the iron as it is absorbed in the form of the chlorid, the following is recommended:

℞.	Acidi hydrochlor. dil.	m. xlv	3
	Aq. destil. q. s. ad	℥x	300

M. Sig.: One tablespoonful after each meal.

Salicylic Acid Externally in Rheumatism.

Timireff, in *Rev. de Ther.*, recommends the employment of salicylic acid by external application in the treatment of articular rheumatism. It may be combined as follows:

℞.	Spts. terebinthinæ	ʒss	2
	Acidi salicylici	ʒiiss	10
	Adipis	℥iii	90

M. Ft. unguentum. Sig.: To be applied locally to the inflamed joint; or:

℞.	Acidi salicylici		
	Olei terebinthinæ		
	Lanolini, āā	ʒiiss	10
	Adipis	℥iii	90

M. Sig.: Apply locally three or four times daily.

By this mode of medication, according to the author, rapid absorption takes place, any disturbance of the stomach is avoided and the pain is relieved. The oil of wintergreen may be substituted for the salicylic acid if preferred.

Disturbances in Gastric Secretion.

The following treatment is recommended by Rankin in *British Med. Jour.* where there is a deficient secretion of gastric juices:

℞.	Acidi hydrochlor. dil.	m. xv	1	
	Acidi carbolici	gr. ii		12
	Sol. strychninæ (1 per cent.)	m. v		30
	Tinct. zingiberis	m. xv	1	
	Glycerini	ʒss	2	

M. Sig.: To be taken at one dose and repeated an hour after each meal, well diluted in water.

If the patient is anemic the following pill should be prescribed after each meal instead of the foregoing solution:

℞.	Quin. sulph.	gr. i	06
	Ferri sulph.	gr. ii	12
	Acidi carbol.	gr. iss	09
	Strych. sulph.	gr. 1/60	001

M. Ft. pillula No. i. Sig.: One such pill after each meal.

When the patient complains of hyperacidity the following is of value:

℞.	Bismuthi carb.	gr. xxx	2	
	Spts. ammon. arom.	ʒss	2	
	Acidi carbol.	gr. ii		12
	Sol. strychninæ (1 per cent.)	m. v		30

M. Ft. solutio. Sig.: Shake the mixture and take the entire amount at one dose and repeat it two hours after each meal.

In the nervous form of gastric disturbance the following:

℞.	Zinci valerianatis	gr. iii	20
	Acidi carbol.	gr. ii	12
	Acidi arsenosi	gr. 1/40	0015
	Ext. cannabis ind.	gr. 1/4	015

M. Ft. cap. No. i. Sig.: One capsule after each meal.

Headache.

Buchanan, in *Med. Summary*, recommends the treatment of the cause. If it is dependent on gastric acidity, the stomach should be emptied and the following given:

℞.	Spts. ammon. arom.	ʒii	8	
	Sodii bromidi	ʒii	8	
	Aquæ q. s. ad	℥iii	90	

M. Sig.: One tablespoonful every two or three hours.

If the headache is due to acute cerebral congestion, the feet should be soaked ten or fifteen minutes in very hot water, an ice bag placed on the head and the following given internally:

℞.	Phenalgin	ʒss	2	

M. Ft. cap. No. iv. Sig.: One every two hours.

In rheumatic headache the following:

℞.	Phenalgin	gr. v		30
	Sodii salicylatis	gr. x		65

M. Ft. chart. No. i. Sig.: One such three times a day.

In uremic headache the diet should consist of milk; the bowels kept regular by salines and diuresis encouraged by digitalis, caffein or the vegetable salts of potassium, as follows:

℞.	Potass. citratis	ʒii	8	
	Spts. juniperis	ʒvi	24	
	Spts. etheris nitrosi	ʒii	8	
	Inf. scoparii	℥vi	180	

M. Sig.: One wineglassful three times a day.

In neuralgic headaches the following:

℞.	Acetanilidi	gr. iiss		15
	Caffeinæ citratæ	gr. ss		03
	Sodii bicarb.	gr. i		06

M. Ft. tablet No. i. Sig.: One such tablet every three hours.

Dysentery.

The following outline of treatment of dysentery in infants is recommended by J. F. Hay in *Med. World:* To an infant of eighteen months or older the following powder is given:

℞.	Salol	gr. xx	1	30
	Bismuthi subnit.	ʒiss	6	
	Pulv. opii et ipecac.	gr. vii		50

M. Ft. chartulæ No. xx. Sig.: One powder every four hours.

The mother is directed to give an enema of normal salt solution morning and evening, the amount given each time depending on the age of the child. The child must be kept on a light liquid diet.

If at the end of a week the stools contain mucus and blood, an enema containing grains 40 of silver nitrate to the quart of water is substituted for the normal saline solution.

Medicolegal.

Validity of License Tax on Healers.—The Supreme Court of Kansas holds valid, in the case of Steiner vs. Liggett, a city ordinance imposing a license tax of five dollars per day on magnetic, psychic or other healers, holding that there was statutory authority conferred on the city to require a license tax from any one engaged in the calling or profession of magnetic, psychic and natural healing.

Evidence of Physicians as to Testamentary Capacity.—The Supreme Court of Appeals of West Virginia holds, in the case of Ward vs. Brown, that evidence of physicians as to testamentary capacity is entitled to greater weight than that of non-professional persons, provided they have had personal observation and knowledge of the person whose mental capacity is in question; otherwise, it is not. Expert testimony, except under special circumstances, is entitled to only such weight as the jury may deem it entitled to when viewed in connection with all the evidence and circumstances; and it is error to instruct the jury that the evidence of physicians testifying as experts only, on the trial of an issue of whether there was a will or not, is entitled to great weight.

Department Superintendent Can Not Employ Physician.—According to the Supreme Judicial Court of Massachusetts, the case of King vs. the Forbes Lithograph Manufacturing Company was brought by a physician and surgeon to recover compensation for services rendered in caring for one of the company's employes, who was injured in the machinery at its factory, and was taken to a hospital, where the physician attended him. The only evidence relied on to show a contract of the company to pay the physician was testimony that a superintendent of the company's cartoon department, who was authorized to employ and discharge workmen, told the injured employe to go to the hospital to be treated, and said that all bills would be paid by the company. There was no evidence that this superintendent of a department was authorized to make such a contract as agent for the company, and the court says that it was very plain that his authority to hire and discharge employes did not give him a right to bind the company by a contract to pay for medical or surgical treatment of one of its employes. In those jurisdictions where railroad companies have been held liable for medical attendance procured for an employe by one of their agents, the liability has been limited to cases in which there was an extreme emergency calling for immediate medical or surgical attendance. In this case there was no evidence to warrant a finding that there was an implied contract on the part of the company to pay for such services, and it was not contended that the undertaking of the superintendent was ratified.

Power of Executive Officer to Employ Physician.—The Court of Appeals at St. Louis, Mo., says that the case of Hasler vs. The Ozark Land and Lumber Company was brought to recover a balance of $135 for professional services rendered in medical attendance on and treatment of two employes of the company, during their affliction with smallpox. But it holds that the case did not fall within the well-established rule sought to be invoked by the company, that unless such relation exists between the party requesting a physician to render professional services, and the patient, as raises a legal obligation on his part to call in a physician and pay for his services, the law will not create by implication a promise to pay the reasonable value of the services thereafter performed, and such relation can not be claimed to exist between employer and employe. The testimony in this case disclosed that the physician had declined attendance on the employes until the vice-president and general manager of their employer had directed him to render the services, and agreed to pay therefor. The evidence also showed that the physician had received $40, which he claimed was in part payment, but which the company claimed was a personal loan by the official advancing it, though it was conceded to have been paid from the company's funds, and without any acknowledgment or obligation therefor given back by the physician. The testimony of the physician, the court holds, entitled him to have submitted to the jury the issue of his employment by the company to render the services performed; and it affirms a judgment in his favor. It also holds that an instruction that the jury might presume that the executive officer of a business corporation, at once its vice-president and general manager, had authority to make the contract on behalf of the company to which the physician testified, under the conditions presented by the record, was proper. The case was one essentially for the determination of a jury.

Examination Under Policy—Negligence—Removing Cast.—The Supreme Court of Appeals of West Virginia holds, in the case of Tompkins vs. the Pacific Mutual Life Insurance Company, that only a right of examination as to an injured person entitled to a weekly indemnity under an accident insurance policy is conferred on the company issuing the policy, by the following clause contained therein: "Any medical adviser of the company shall be allowed to examine the person or body of the insured in respect to any injury or cause of death in such manner and at such times as he may require." The court says that also confines the authority of the company's agent (medical adviser) within the same limit. That right of examination, and the agent's authority, however, extend to the making of the examination "in such manner and at such times" as the agent may require. It confers no right to treat the injury, and the insured is not bound to submit himself to any course of treatment at the hands of any physician that the company may indicate. If he had bound himself to that, the obligation would have carried with it his voluntary submission to the ordinary risk to which the law holds all persons who submit themselves to treatment at the hands of physicians, and he could make the company liable only on such grounds as would enable him to recover damages from a physician employed by him. In such case a physician is held to the exercise of such care, skill, and diligence as are ordinarily possessed by the average members of the profession in good standing in similar localities, regard also being had to the state of medical science at the time. This construction of the clause quoted, the court further holds, undoubtedly creates the relation of master and servant between the company and its medical adviser in the exercise of such right of examination, and the company must answer for injuries resulting from the negligence or misconduct of its agent in the premises. Though the insured is not bound to submit to such examination, and may refuse at the risk of loss of his indemnity, or of litigation on account of his refusal, he may submit to it without losing his right to exact care and skill in its exercise; and it is no defense to his action that he consented to examination in a particular manner, if he did so in pursuance of a request or demand that it be so made. Between the physician and the insured, in such case, the law governing the relations of physician and patient does not apply. Where the injury of the insured is a sprain of the foot, requiring a plaster cast or similar appliance to hold the injured ligaments in place until they heal or regain strength, and the agent, in making the examination, removes, and fails to replace, such appliance, and injury results therefrom, he is guilty of negligence for which his principal must answer in damages. Referring particularly to the case before it, the court says that, having the right to examine in such manner and at such times as it saw fit, the company did no unauthorized act in removing the plaster cast, if its removal was necessary or desirable in making the examination, and not injurious. As to this there was no controversy. Nor did it seem to be disputed that, in the absence of directions or assent to the contrary, on the part of the insured, it was the duty of the company's agent to replace the bandage. Clearly it was, for by leaving it off the status was changed, and no right to make such change was given by the contract. In a sense, that would have been going entirely beyond a mere examination, and performing a work in the nature of treatment of the wound.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

July 18.

1 The Struggle of Science with Old Age. J. Bandaline.
2 *The Clinical Importance of Albuminuria. Henry H. Schroeder.
3 *The Art of Increasing and Diminishing the Bodily Weight at Will. Max Einhorn.
4 *The Present Status of Subconjunctival Injections in Ophthalmic Therapeutics. Charles S. Bull.

2. **Albuminuria.**—Six cases of albuminuria are reported by Schroeder, who holds that it is impossible to determine whether albuminuria is a premonition of further trouble until the case has been kept under observation for some time. Transient albuminurias are not of serious import unless they recur too frequently. Persistent and even cyclic albuminurias should cause anxiety, and the physician should ascertain the cause and act accordingly. As a rule the earliest indications of Bright's disease will be found in the urine. Careful observation of these cases means frequent examination of twenty-four-hour specimens to find out the daily quantity, the amount of urea, the specific gravity and the presence of albumin and casts. The blood vessels and heart should receive attention. These observations may have to extend over a period of months or even years. The most frequent causes of albuminuria are excessive eating, over-indulgence in alcoholics, possibly tobacco, mental and physical stress and the gouty diathesis. The mortality among albuminuria cases is great, not only because of its association with chronic nephritis, but also on account of the poor resistance to other diseases.

3. **The Body Weight.**—Einhorn discusses the methods and indications for increasing or reducing the body weight. Physicians are frequently called on to treat emaciation and also the leanness of the healthy, which, if of too high degree, should be combated. Such persons have no reserve fat to fall back on. He holds that in 90 to 95 per cent. he has been successful in raising the body weight where he has tried it. We should inquire into the amount and quality of the food taken; how it is taken. If it is insufficient, it should be prescribed in larger quantities. If a beverage is taken at meals it should be more nutritious. In suitable cases two or three smaller meals, consisting of milk and buttered bread, may be given with advantage. It is advisable, he says, to prescribe the daily amount of butter that should be taken; he usually orders a quarter of a pound a day. The success of treatment is practically assured, if it is possible to take larger amounts of food. He thinks a glass of cold water during eating has a stimulating effect on the appetite. Outdoor life and moderate exercise are of great value. By the successful addition of food and exercise we have not only an increased formation of adipose, but also of muscular tissue and gain in strength. The body weight should be reduced as soon as there is a surplus of fat, which is displeasing to the eye or mars the harmony of the body. There are two ways: diminishing the amount of food or increasing the amount of work, or a combination of both. Practically, he says, we should proceed to determine exactly under what dietary an individual remains in a state of bodily equilibrium. If he has not gained, you may take the amount of food he has been taking as the standard, but if he has gained on it, it should be diminished. The weight of the patient should be controlled every two or three days. As soon as the amount of food necessary to keep a proper equilibrium has been determined, we must begin slowly to increase the muscular work, never allowing the patient to become exhausted. The accelerated heart action and respiration must return to the normal ten minutes after beginning to rest. If this is not the case, the work must be reduced. By the methods here employed the fat is distributed where it will not interfere with muscular action.

4. **Subconjunctival Injections.**—Bull's article is almost entirely a review of the work and the recommendations of others. From an examination of all the papers and cases reported, he concludes that the efficacy of the solution injected can not be ascribed to local acceleration of the lymph currents, the so-called leucocytosis, nor to the antiseptic action of the remedies employed, since the presence of such processes can not be demonstrated in the tissues of the eye after injection. The chief change seems to be in the composition of the aqueous humor and the explanation of the action of the subcutaneous injections is to be sought in their local irritating properties. A careful observation of his own cases has not convinced him that subconjunctival injections bring about any more rapid or favorable results than other methods of treatment, excepting in cases of orbital cellulitis of an infectious character where injections of a sublimate solution did have a favorable effect in hastening the suppurative stage and reducing the infiltration. He thinks all reports of the beneficial effects of subconjunctival injections should be carefully criticised and compared with the results obtained by other methods of treatment before accepting them as of any real value.

New York Medical Journal.

July 18.

5 *Artificial Immunity in Experimental Tuberculosis. E. L. Trudeau.
6 *A Statistical Report of Gastrotomies for Removal of Foreign Bodies from the Stomach. Julius Friedenwald and L. J. Rosenthal.
7 The Subcutaneous Use of Paraffin in Deformed Noses, with a Supplementary Report. Hal Foster.
8 A New Obturator for the Urethroscope. I. H. Jacob.
9 *Subconjunctival Medication, with Special Reference to the Use of Salt-sugar Solution in Acute Affections of the Anterior Portion of the Eye. Howard McI. Morton.
10 A Case of Black, Hairy Tongue. R. H. Johnston.
11 The Temperature in "Summer Complaint." William F. Waugh.

5. **Immunity in Tuberculosis.**—Trudeau reports his experiments which, like those of de Schweinitz, antedated those of Behring. He has used only small animals, guinea pigs and in these he has not obtained an absolute immunity that will protect overwhelming infections, but still they show that the latter condition is not comparable with ordinary exposure in every-day life. He thinks the principle has been established and that with a more thorough knowledge of it we may yet get considerable immunity. Behring has shown an absolute protection of calves and if we can only do as much for babies one of the greatest problems of the medical profession will be solved.

6. **Gastrotomies for Foreign Bodies.**—Friedenwald and Rosenthal analyze the published cases of gastrotomy for foreign bodies in the stomach, showing that it is best to remove them as early as possible by gastrotomy as delay may produce serious gastric disturbances and make further operative procedure more difficult and serious. They give a tabulated statement of some ninety cases from the literature.

9. **Subconjunctival Medication.**—Morton advocates the use of physiologic salt with 3 per cent. sugar solution added for subconjunctival injections. Its use thus far has been confined to cases of pneumococcus ulceration of the cornea, to forms of plastic iritis associated with rheumatic disease, traumatic infected ulcer of the cornea and dendritic ulceration. In all these classes of cases it has been his regular practice to use injections of 2 to 4 grams, or even 6 grams, of salt-sugar solution, using the ordinary hypodermic syringe with a capacity of 1 c.c. and filling the subconjunctival space about the corneal margin entirely. This necessitates the introduction of the syringe at several points just anterior to the insertion of the recti. In sthenic individuals with one eye alone involved, the injection of a large amount of fluid subconjunctivally is the best procedure, to be followed by slight pressure from Liebrich's pad, and the patient is directed to use hot fomentations for periods of five minutes with half-hour intervals. He has never yet seen an eye suffer from this operation. The injections were preceded by the instillation of a 4 per cent. solution into the cul-de-sac, thus causing but little or no pain. He thinks the use of subconjunctival injections is limited to the more severe and intractable cases. Ordinarily the office methods are sufficient for the common forms of disease involving the anterior ocular segment, but he does believe that this method of medication assists in promoting resolution more rapidly in certain intractable cases than the usual local measures.

Boston Medical and Surgical Journal.

July 16.

12 The Sources Favoring Conditions and Prophylaxis of Malaria in Temperate Climates, with Special Reference to Massachusetts. (To be continued.) Theobald Smith.
13 *Subparietal Injuries of the Kidney. (Concluded.) Francis S. Watson.

13. **Subparietal Injuries of the Kidney.**—In this conclusion of his paper Watson gives an account of 6 personal cases and discusses the treatment. He first calls attention to the high mortality with expectant treatment and the low mortality in the series operated on otherwise than by nephrectomy. Hemorrhage is the factor which needs the most attention, and the source of it should be at once sought for by laparotomy when it announces itself by the presence of free fluid in the peritoneal cavity or by other signs of progressing hemorrhage. The details of operative treatment are given rather fully. The first fundamental principle is to save the kidney, or as much of it as possible, and make only a partial nephrectomy if only a portion of the organ is damaged, closing the kidney wound by suture. If one has to choose whether the spleen or kidney is to be removed, let it be the spleen. In liver involvement the tampon and suture are appropriate and often successfully used. In uncomplicated cases, not presenting any evidence of progressive hemorrhage, a question as to expectant treatment may be raised. In the great majority, where the hematuria is of short duration, or slight if of long duration, and when it is not secondary, and when no signs of progressive hemorrhage are shown by the patient, expectant treatment may be employed. Otherwise, operative treatment should not be delayed. The conditions that call for prompt surgical treatment are sudden disappearance of blood from the urine if accompanied by pain and the appearance of tumor or increase in the size of an existing tumor, showing that the pelvis or ureter has become blocked; also retention of urine in the presence of clots as well as the signs already mentioned. In regard to the danger of infection, surgical intervention seems to be indicated, he thinks, when there is a tumor in the loin which does not subside within a reasonable time, say a fortnight; when the bladder is already infected or becoming so, or is liable to become so from the necessity of frequent catheterization, as in prostatic obstruction, and when there is retention due to blood clots; lastly, if there is any reason to suspect previous existence of such diseases of the kidney, as tumors, calculus, pyelitis or pyelonephritis. He finds but 7 cases in the literature where suture of the kidney has been performed, or 8 including the one here reported. He thinks that while his case and one other were unsuccessful, it is worth while to apply the suture in such cases as are amenable. As regards the lumbar and abdominal routes for nephrectomy, he finds the death rate only slightly higher in the latter, and when we leave out complicated cases the figures are even more favorable for the abdominal route. As regards the decrease in the death rate of the two operations during the past thirty years, it has been apparently much greater with the latter than the former.

American Medicine, Philadelphia.

July 18.

14 *On Diseases of the Gall Bladder and Bile Ducts. C. A. Ewald.
15 *Diseases of the Skin. George J. Bucknall.
16 *Tuberculous Ulceration of the Rectum and Anus. Lewis H. Adler.
17 *The Etiology of Leukemia. John Benjamin Nichols.
18 *Treatment of Eclampsia. William Krusen.
19 Scarlatinal Arthritis. E. Palier.
20 A Season of the Pioneer Resident Physician in the Yosemite Valley, 1901. Charles V. Cross.

14. **Diseases of the Gall Bladder and Bile Ducts.**—Ewald's article discusses the diagnosis, more particularly of the diseases of the gall bladder itself, noticing the symptoms of colic, icterus and tumor. In conclusion he remarks in regard to treatment, holding as regards operation that the circumstances are comparable to those of appendicitis, but in case of gall-bladder disease operations are much more difficult and more severe in their consequences than those of the appendix. During the acute inflammatory stage he advises treating the colic by the known means of relief and in addition washing out the stomach with hot water or with a solution of nitrate of silver (Ehrlich), or the drinking of large quantities of hot water. In severe acute infections immediate operation is advised. In patients with rapidly recurrent favorable attacks he prefers internal treatment; in unfavorable cases with recurrent attacks he advises operation. In cases of long standing obstruction or compression jaundice he advises operation according to the individual case. A positive diagnosis of compression jaundice indicates immediate operation. On the other hand, in cases of obstruction jaundice by stone he believes that if the patients can take care of themselves properly and use no extra exertion, operation may be delayed for some time. The fact that healing of the wound after operation has so many threatening circumstances, leads one to wish to spare the patient the ordeal as much as possible. In any case preventive means against recurrences should be employed.

15. **Diseases of the Skin.**—The importance of diet in relation to skin diseases is emphasized by Bucknall, who thinks that the quantity of the food, as well as its quality and method of giving and the time at which it is taken, may all be of importance. There is no universal table of diet in these cases. Carbohydrates in excess are injurious; pastry should be especially avoided. Alcohol is harmful even in small quantities in many skin diseases. Tea frequently does harm; coffee and coca are less injurious, but should be taken in moderation. He has no doubt as to the harmful effect of tobacco in certain cases. The climate and air also have their influence and too frequent washing, depriving the skin of its fat, may have some bad effect. The common notion that suppression of diseases of the skin is injurious has no definite facts for its

support. It is probably based on the observation that in some cases of eruptive fevers if the rash does not come out or recedes, the constitutional symptoms appear to be more severe. An accurate diagnosis is the very first essential. We must not imagine that when we know the cause the treatment that is most obvious is necessarily the best. As to external and internal treatment, one may be better in one case and another in another. He particularly speaks against the routine use of arsenic which will always aggravate skin diseases of the acute type. It is of value only in cutaneous diseases of the scaly character, psoriasis, lepra, etc., and then requires careful watching to obviate the destruction of red blood cells. Baths are often of value. There is a risk of absorption by the skin of substances from the bath, therefore they should never contain anything that might be dangerous to absorb. Permanent baths are but little used in this country though they are occasionally of great use. They are troublesome to manage, however, and of but limited application. In parasitic or fungoid diseases of the skin when baths are advised he prefers for the medication the albuminate of mercury which if absorbed is not harmful. Ointments are most frequently prescribed but they are uncleanly and may often be replaced by other applications. When there is a profuse secretion from the skin lotions and dusting powders are advisable. The author speaks of dymal (salicylate of didymium), recommended by Kopp in certain forms of dermatoses, eczema, psoriasis, etc. He has seen it do excellent work in weeping eczema. As the skin disease varies from time to time it will be necessary to alter the local treatment and its application. It is better, he says, to have in mind the therapeutics of a few substances and the best means of using them than to be making hasty inconclusive trial of every new preparation or treatment that is devised.

16. **Anal Tuberculosis.**—The reason why there is not more intestinal or rectal tuberculosis is briefly discussed by Adler, who thinks it is possible that the gastric fluids may be destructive to the germs, and it is only when they are in excessive numbers that these parts are attacked. He suggests a treatment on this basis, that is, the use of essence of pepsin acidulated with 2 drops to the ounce of a strong nitromuriatic acid applied directly to the ulceration either with the atomizer or on gauze left in contact with the parts. Systematic treatment by the use of some of the other remedies was also usually employed. His experience thus far with two cases has been sufficiently encouraging to warrant the mention of the matter, but he can not speak with authority as to the final outcome.

17. **Leukemia.**—From a general discussion of the subject, Nichols concludes that heredity, trauma and precedent disease conditions may have a causative influence but are of only subsidiary etiologic moment in leukemia. Almost nothing is positively known as to the specific primary cause. A nervous origin has been suggested. Aside from this the best explanation seems to be limited to: (*a*) That it is due to a vice in the internal processes of cell life and division that comes into generalized activity and results in exaggerated leucocytic hyperplasia; (*b*) that it is due to the action of toxic substances, autogenous or of parasitic origin; (*c*) that it is of infectious or parasitic origin, the parasites acting by the production of toxins or otherwise. Only the latter has been subjected to investigation and a considerable amount of bacteriolytic evidence been accumulated, but barring three or four doubtful exceptions is entirely negative as to the etiologic association of bacteria with leukemia or as to the transmissibility of the disease.

18. **Eclampsia.**—On general lines the treatment advised by Krusen is first prophylactic observation of the condition of the urine, especially the amount of urea excreted, keeping up a healthy action of the skin and elimination generally. He rather endorses the suggestion of Nicholson as to the relation of the thyroid gland to eclampsia and the use of thyroid in medication, and holds that on a thorough investigation of the relation between the thyroid gland and pregnancy depends much of our future success in the management of pregnancy and eclampsia. For the treatment of convulsions he holds that chloroform is one of the most reliable agents, and during the intervals venesection is one of the most important measures, though it has somewhat fallen into disfavor. Personally he thinks it is better than veratrum viride. When the pulse shows high tension and the face of the patient is suffused or almost cyanotic, bleeding should be employed. The depressing effect can be counteracted and the unknown toxins diluted by normal salt solution injections, intravenously, subcutaneously or by the rectum. There is no more valuable addition to our therapeutic resources in the last decade than normal salt solution. For purgation to aid elimination, croton oil, calomel, or a saline may be administered, to secure results a high enema of magnesium sulphate, glycerin and water should be given. He does not favor prolonged packs or baths. A brief warm bath may have a soothing effect. Morphia has a useful place and there is an undoubted tolerance which allows the use of large doses. It has great power and rapid action in preventing repeated convulsions in certain cases. In the majority of cases the convulsions cease soon after the uterus is emptied, and if eclampsia comes on when the child is viable, then extraction becomes advisable. He would not, however, advise cesarean section, as has been proposed. It is only justifiable when there is some reason for it. He thinks if the patient is actually in labor, in the second stage, the immediate emptying of the uterus is indicated. Mechanical dilatation of the cervix and deep cervical incisions are the best plan of treatment. The sooner it is begun and completed the better the chances of recovery. The eclamptic woman is especially liable to infection after delivery on account of the manual interference and traumatism undergone. Extraordinary care should be observed during the after care of eclampsia along the ordinary lines, but with more rest and quietude and with more vigilant attention to all the excretory organs.

Medical News, New York.

July 18.

21 *Presidential Address on the Care of Epileptics. Frederick Peterson.
22 *Nature, Frequency and Possible Significance of the Various Forms of Epileptic Aura. William P. Spratling.
23 *The Daily Rhythm of Epilepsy and Its Interpretation. L. Pierce Clark.
24 *On the Pathology of Epilepsy. Adolf Meyer.
25 The Legal and Social Standing of the Epileptic. Edgar J. Spratling.
26 *Therapeutic Suggestions in Diphtheria. Louis Fischer.
27 A Report of a Case of Spina Bifida, Operation, Death. Charles Greene Cumston.

21. **The Care of Epileptics.**—Peterson reviews the history of the methods of care of the epileptic before the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics.

22. **Epileptic Aura.**—Spratling's article is detailed and lengthy, giving a large number of the principal symptoms that may precede the epileptic attack, both psychic and physical. His experience leads him to believe that the more sudden, severe and complete the attacks the less likely is it to be preceded by an aura. The further the convulsion departs from the classic type the more common and distinct the aura. The symptoms of aura justify close and analytic study as contributing possible guides to the seat of the disease.

23. **The Daily Rhythm of Epilepsy.**—From the study of 150,000 seizures, Clark finds that there is a more or less definite daily rhythm in the epilepsies, in the early evening, the noontime and early morning, roughly dividing the twenty-four hours of the day into eight-hour periods. There are also smaller or secondary rhythms. The interpretation of the rhythm is explained on the basis of cerebral fatigue and the accumulation of waste products at these periods which produce autointoxication, and which in turn exhibits itself in seizures during light sleep and during the day when the loss of cerebral inhibition is greatest. Secondary and contributing factors are manner of living, diet, exercise, occupation, sedatives and the character of the epilepsy.

24. **Pathology of Epilepsy.**—Meyer criticises the methods of study and finds that the anatomic ideas of epilepsy have not as yet any very decided support by reliable data. There have been certain researches, however, in the last five years which

are fundamental, such as that of Prus, who shows that cocainization of the cortex makes fits by electrical stimulation impossible, thus indicating that stimulation of the sensory elements of the cortex is essential to start any fit. He also points to many irregularities in the irradiation of the discharge over the cortex, and shows that not only the pyramidal tracts, but the segmental motor paths are the carriers of the impulses from the cortex to the segmental nerve-complexes. Bier has also refuted Kocher's idea that intracranial pressure is the cause of the fits, as he did not produce them by sudden increase of the pressure by temporary strangulation, even in epileptics. The second line of research of importance is that of the relation of metabolism to fits, and here we have much confusion in experiments and their results. Meyer thinks, however, it would be fair to say that with attacks of epilepsy go expressions of an abnormal state of equilibrium, evidenced by malaise and abnormal metabolism. Autointoxication is not demonstrated. The explanation of the occasional toxicity of the urine and blood for animals is still wanting. He does not as yet place any too much value on the ideas of Bra or Ceni, whose brilliant experiments with epileptic serum have been noted. He calls attention in this connection to the important psychic factor in all the new methods of treatment of epilepsy. He thinks there is at present a large material of safe empirical facts which has led to improvement in the condition of epileptics and their management. There are still good chances for a better utilization of what we know. The pathology of scientific medicine has added little, and it does not seem to give much immediate promise. He concludes as follows:

1. The frequency of nervous lesions in epileptics is difficult to establish. The ordinary examination is too open to oversights, and must be very systematic in order to justify the verdict of negative findings. The great variation in the number of sclerosed cornu ammonis, diffused gliosis, small foci of softening quoted by various authors, is certainly, to a large extent, an expression of variable attention, a picture of the psychology of investigators rather than of the distribution of facts.

2. Concerning the chemical investigations, the same psychologic factor of personal interest is even more deleterious to a fair comprehension of the facts. The truism that observation of the rules of hygiene in every direction is a great factor in the management of epilepsy, is decomposed into innumerable currents of interests. Nothing short of unprejudiced and complete series of investigation will help us here, and also a much greater conservatism with complicated methods, such as the tests of toxicity, the results of therapeutics, etc.

3. All these conditions are difficult to attain except in sufficiently equipped institutions, for which funds should be made available by the state, and by scientific corporations, so that they may work free of the need of sensational results, create a sound basis in clinical work and systematize the investigation according to methods which can be admitted as safe and fruitful.

To what extent this had best be carried is a question requiring much judgment. The one thing is certain—and every move in this direction should receive credit and encouragement—that institutions should be given a chance and should even be put under the obligation of doing justice to medical observation, of promoting the medical interests of its physicians and of laying a good foundation of experience, such as the isolated practitioner can never get for himself. On such ground more delicate investigations will find a healthy soil.

26. **Diphtheria.**—The specific treatment of diphtheria consists in giving the required dose of antitoxin, which depends on the severity of the affection; in mild cases 1,500 units in a child from 1 to 5 years. It should be repeated if the effects are not noticed within twelve to twenty-four hours. A child 5 to 10 years old should be given 2,000 units when it is first injected, with the same repetition if required. With severe toxemia and marked general depression and large pseudomembranes in the throat at least 3,000 units should be injected in the beginning. Two or three injections may be required at twenty-four-hour intervals, depending on the pulse, temperature, condition of the swollen glands and microscopic condition of the throat. In laryngeal stenosis it is also well to give fully 3,000 units, repeating with 1,500 in twelve hours if the stenosis does not disappear within that time. In many cases the pure Klebs-Loeffler bacillus is not the only infection and streptococcic antitoxin serum will be required. In a few he thinks the bacteriologic findings will be a guide to treatment, based on scientific data. The ordinary shortcomings that are most frequently encountered consist of placing too much reliance on the specific nature of the antitoxin regardless of other vital necessities. The indication next to antitoxin is for restorative treatment; proper feeding is essential. When it is difficult to feed by the mouth, it is a good plan to let the stomach have a rest and depend on rectal feeding. It is always advisable to remove putrid mucus from the nose and throat and catarrhal discharges to prevent their poisoning the system. It is surprising to see what good results are apparent, he says, after cleaning the nose and pharynx. As regards the solvent action of local remedies, he has not been able to see its value, though 2 per cent. sulphurous acid has been used by him to advantage, and is better than peroxid of hydrogen. He has used inunctions of unguentum Credé into the cervical glands. Fresh air in the sick-room is important and oxygen is indicated when there is cyanosis. The best antipyretic measures consist in sponging with evaporating lotions such as alcohol and water or acetic ether, locally. Cold packs and flushing the bowel are serviceable in some cases. If there is pneumonia, nephritis or other complication it should be treated as though the disease existed independent of the diphtheria. He advises an examination of the ears, as otitis media will sometimes keep up a high fever until the drum is ruptured. Ten to 20 drops of sweet spirits of niter are valuable, given several times a day, and calomel in 1/10 to ½ grain doses, repeated several times a day, is a useful adjuvant. Stimulants should be begun early, strychnin 1/100 of a grain for children one year old, repeated four times a day and gradually and cautiously increased. Children tolerate large doses. He also advises Tokay wine, caffein and champagne to support the heart's action.

Cincinnati Lancet-Clinic.

July 18.

28 Adenoids—Their Symptoms; Relations They Sustain to Acquired Deaf-mutism, and Treatment. Benjamin L. W. Floyd.
29 The Kentucky State Medical Society, 1903. George J. Monroe.
30 Surgery of the Prostate, Pancreas, Diaphragm, Spleen and Thyroid. (Continued.) B. Merrill Ricketts.

Louisville Monthly Journal of Medicine and Surgery.

July.

31 President's Address, Medico-Chirurgical Society. B. A. Allan.
32 *Cancer of the Rectum. F. W. Samuel.
33 X-Rays; the Action on the Physical Organization. Jacob Glahn.
34 Some Experiences with the X-Rays as a Therapeutic Agent: Report of the Cure of a Case of Alveolar Melanotic Sarcoma. Edwin Walker.
35 *Surgery of the Hand in Factory Practice. L. P. Spears.
36 The Early History of Transylvania University. Francis M. Greene.

32. **Cancer of the Rectum.**—The progress that has been made in the treatment of cancer of the rectum and the various operations suggested are first noticed by Samuel, who remarks on the insidiousness of the onset and the lack of characteristic symptoms. His own experience leads him to regard as one of the earliest symptoms a sense of fulness in the rectum accompanied by a mucous discharge, first noticed by the patient as simply a liquid discharge, with occasionally a slight amount of blood. Stenosis may be the first sign which forces the patient to seek relief. Bloody discharges may precede it. Pain is a marked feature in the later stages. The prognosis is a gloomy one, hence the advisability of early examination of all irritating conditions of the rectum. He notices the operative methods which, in his opinion, give the best results. The operative cases are where the obstruction is not marked and the infiltration has not progressed beyond the rectal walls. Much will depend on the location of the growth. He thinks the greatest advance in the future will be based on the fact that in most cases operators will entirely obliterate all the bowel below the site of the excised portion, and abandon the idea of establishing a continuity of the rectum by bringing down the upper part of the gut and suturing it to the intact sphincter. He advises the following steps as essential: That an artificial anus be made or anticipated by doing a preliminary colostomy in preference to the more radical operation. This will permit better disinfection by irrigation, which improves the patient's condition. With the growth high up in the rectum he would be influenced by the late teachings of Quénu, Abbe and others, and select the abdominal route, extending the usefulness of the operative procedure in that it could be made more radical in attacking lymphatic involvement, and that the ends of the bowel, if possible, might be brought out at the time

of operation or an artificial anus established at once In obliterating the distal portion we get rid of the danger of infection by offensive discharges and incomplete operation With preliminary colostomy fecal defilement is gotten rid of. He has had no experience with the combined abdominal and sacral route, but is encouraged by the results of Quénu and Abbe. Two cases are reported.

35 **Surgery of the Hand.**—Spears advises in factory practice with injuries of the hand to use conservatism to the utmost. Let the preliminary dressing consist of sterile gauze and the blood present if the man has been working in iron If a woodworker, it is advisable to wash out the fine dust. Gasoline or benzine is best for cleaning the surrounding area The use of bichlorid should be done away with and suture material should be abandoned in injuries of the fingers A sterile wet dressing is to be used where suppuration has taken place.

Medicine, Detroit.

July

37 *Septic Sinus Thrombosis Due to Ear Infection B Alex Randall
38 *Laparotomy Convalescence, with Reports of Twenty Illustrative Cases Robert Wallace Hardon
39 *Management of Crossed Eyes in Children Willis O Nance
40 The Clinical Aspect of Diarrheas in Infancy, with Treatment James W Van der Slice
41 Three Cases of Atrophic Rhinitis Successfully Treated with Benzoylacetyl Peroxide (Acetozone) , a Preliminary Report James M Brown
42 *The Effects on Streptococci of Blood Serum from Cases of Scarlatina George H Weaver and G F Ruediger
43 Serum Therapy John G Cecil
44 The Diplococcus Scarlatinæ W J Class
45 The Etiology of Acute and Chronic Cystitis C B Van Arsdall
46 *Euphthalmin as a Mydriatic for the General Practitioner Albert B Hale

37. **Septic Sinus Thrombosis Due to Ear Infection.**—Randall reports two cases of sinus thrombosis from otitis, one fatal, and argues for early operative intervention in these cases.

38 **Laparotomy Convalescence.**—The question as to how soon patients should get up after abdominal operation is discussed by Hardon and his experience in twenty cases of laparotomy where the patient was up within from one to four or five days is detailed. His conclusions are that early getting out of bed tends toward greater comfort to the patient, shortens the stay in the hospital, there is earlier general convalescence, less danger of adhesions, diminished expense to the patient or charitable institution, while it avoids muscular atrophy from disuse and facilitates nursing.

39 **Strabismus**—According to Nance, the ideal treatment in strabismus includes the establishment of binocular vision, which can usually be brought about by early treatment and, in a large proportion of cases, only by persistent and painstaking efforts on the part of the physician and parents Delay in treatment renders less probable a perfect cosmetic result and endangers the probability of normal vision The use of atropin is indicated early and glasses in most of the cases as soon as the patient is old enough The monocular occlusion pad and various orthoptic exercises are valuable adjuncts to successful management A thorough skiascopic and ophthalmoscopic examination by a competent ophthalmologist should precede the use of glasses All astigmatism, as well as hyperopia or myopia, must be fully corrected and the correction ordered for constant use. Operative interference is justifiable and indicated after other measures have proven of no value, or in certain instances where the deviation is so extreme as to render inefficient ordinary orthoptic exercises

42 **Streptococci in Scarlatina Serum.**—From experimental results with blood serum from scarlatina cases controlled by others with serum from normal individuals, Weaver and Ruediger conclude that neither normal nor scarlatinal blood serum possesses *in vitro* any appreciable bacteriolytic effect on the streptococci, and since normal blood serum exhibits no destructive action on streptococci it is illogical to ascribe terminal and other streptococcemias to any reduction in such action The results obtained by using the colon and typhoid bacilli alone as indicators for the bacteriolytic complement serum can not be applied to other forms of bacteria, but each form must be tested separately.

46—See abstract in The Journal, xl, p. 1305.

Buffalo Medical Journal.

July

47 Local Conditions of Geography and Population as Bearing on the Water Supply and Sewerage of Buffalo A L Benedict
48 *Why Min [illegible] ions Fall to Give Anticipated Results
49 Clinical [illegible] Leopold F W Haas and G A de Santos Saxe
50 Some Thoughts on Modern Medicine A W. Bayliss
51 St Louis and the Exposition of 1904 Nelson W. Wilson
52 Multiple Abscess of the Liver D L Ruffner

48. **Minor Gynecologic Operations.**—Goldberg summarizes his paper in substance as follows: All so-called minor operations, to be of permanent use, must be performed within at least one year from the time of beginning of the original lesion After one year either the Alexander operation, trachelorrhaphy or curettage, or all combined, will be insufficient to restore the patient to perfect health. The reason for such failure in most cases is the involvement of the adnexa The best course would be some operative intra-abdominal procedure, not by the internal inguinal ring method of Goldspohn, but by free incision, so that the exact conditions can be learned and properly treated

Chicago Medical Recorder.

July 15.

53 *Ovarian Transplantation and Reconstruction of Fallopian Tubes Franklin H Martin
54 *Report of Thirty Cases of Perineal Prostatectomy John B Murphy
55 *Report of a Case of Elephantiasis Due to the Filaria Sanguinas Hominis Nocturnis Mary M S Johnstone
56 Pancreatic Cyst; Carcinoma of the Stomach A E Halstead
57 *Hysterical Affections of the Eye H Gradle
58 *Iodo Nucleoid, a New Organic Iodin W L Baum
59 Uremia · Shortcomings of Certain Urinary Tests Merlin Z Albro
59½ Hygiene in Summer Complaints William F. Waugh

53. **Ovarian Transplantation.**—Martin reports two interesting cases where patients that had suffered from the loss of their ovaries came to him asking to have them restored. In each case he had the patient take a lodging near the hospital at which he was engaged, waiting for an opportunity to obtain fresh ovaries from some other subject. The operations were performed by transplanting portions of the ovaries which he had removed from other patients, into the broad ligament outside the horn of the uterus on either side. In both patients there was perfect recovery from the operation and signs of menstrual molimen, though no complete menstruation as yet In both cases the ovaries had been removed long enough so that an artificial menopause had been thoroughly established and atrophy of the uterus had taken place. The preliminary operation had also destroyed the tubes or oviducts, making it necessary to reconstruct the oviducts from the atrophied remaining portions of amputated tubes and the horns of the uterus The operation was unique in some ways in both cases, but he believes when sufficient time has elapsed for the atrophied uterus to recover its function, normal menstruation may occur. In both these cases there has evidently been a revivifying effect on the pelvic organs Aside from the case reported by Glass, these are the only attempts that have been made to perform heteroplastic transplantation so long a time after removal of the organs. From his personal experience and a review of the literature he concludes as follows:

1 The operation of homo- or hetero plastic transplantation of the ovaries in women or lower animals is no more dangerous if accomplished aseptically than any other small plastic operation on the appendages (Morris Dudley, Fish, Griegorioff, Frank, Arendt, Ribbert, Rubinstein, Glass, Mauclaire, Amico Roxar, Monprofit, Foa, Knauer)

2 Homotransplantation of ovaries in women or lower animals will prevent the atrophy of the genitalia which usually follows castration (Morris, Dudley, Fish, Griegorioff, Knauer, Lukaschewitsch, Foa, McCone Mauclaire)

3 Heterotransplantation of ovaries in women or lower animals will prevent the atrophy of the genitalia which usually follows castration (Glass, McCone, Mauclaire, Schultz)

4 *Transplantation* of ovaries from one species into another may result in preventing the ordinary changes in the genitalia resulting from castration (McCone, Lukaschewitsch, Schultz)

5 Menstruation will continue in women and monkeys after homo plastic transplantation of ovaries (Morris, Glass, Dudley, Frank, Mauclaire Martin, Halban, in monkeys)

6 Conception has followed homotransplantation in animals (Griegorioff, McCone Amico-Roxar, Mauclaire)

7 Conception has followed heterotransplantation in animals (McCone, Mauclaire)

8. Conception has followed heterotransplantation of the ovaries in women. (Morris, Frank.)

9. Transplanted ovaries in other localities than the normal will maintain their vitality, functionate and prevent the ordinary sequelæ of castration.

54. **Perineal Prostatectomy.**—The operation and its variations for the enlarged prostate are reviewed by Murphy, who concludes that the perineal route gives the best ultimate results and is accompanied with less danger than the suprapubic or Bottini operations. As regards hemorrhage, sepsis, injury to the neighboring parts and danger to life, this operation is the best. The drainage is excellent and it favors rapid restoration of the bladder, while the period of wound repair is much shorter than by the suprapubic route. All his cases had primary union down to the drainage tube. The vesical control is almost uniformly good, and while the sexual power is destroyed, the relief of vesical irritation is great and the frequency of micturition is reduced to about normal.

55. **Elephantiasis.**—Johnstone reports the case of a patient with elephantiasis due to the *Filaria sanguinis hominis* as shown by blood examinations, though the patient had never lived in any region where this parasite is supposed to abound. The disease, she considers, had been acquired from a person suffering from filariasis who lived near her or from some mosquito infected with the bacilli brought from tropical regions in fruit. The inflammation and pain were relieved in this case by Lugol's solution, five drops three times a day.

57. **Hysterical Eye Affections.**—Gradle reviews the various forms of hysterical eye disorders, absolute blindness of one or both eyes being rarest, only about fifty cases being reported, either bi-lateral or mono-lateral. Both of his own cases promptly yielded to suggestion when observed in their incipiency. Hysterical exaggeration of visual imperfections is much more common, and he notices a singular phenomenon, named by Greef "tubular field of vision," in which when there is a contraction of the field of vision the absolute area of the field is the same, no matter at what distance. A double sight of one eye, not accounted for otherwise, is very suggestive of hysteria. Unless there is unequal refraction through different parts of the lens as determined by examination, monocular double sight may be always referred to hysteria. Other hysterical symptoms are pain and disagreeable sensations referred to the eyes, and most frequent of all is persistent winking. It is a mistake to call it chorea. He thinks it is generally a hysterical manifestation. The irregular action of the ciliary muscle is occasionally a troublesome symptom, but its frequency has been overrated. It is more common than true ciliary spasm.

58. **Iodonucleoid.**—Baum describes a new preparation of iodin made by Wesener, that he calls iodonucleoid. It is a reddish-brown granular powder, containing 9.5 per cent. of iodin in organic combination with nuclein, and he reports experience with its use. He has never seen any untoward effects in the 50 cases in which he has employed it, excepting occasionally a slight iodin acne. He thinks the good effects he has observed are due to the retention of iodin in organic combination in the system. It is non-toxic, 488 grains having been given in twenty-four hours, and twice as much iodin is retained and only one-fourth as much given as compared with potassium iodid, as shown by a study of its elimination made in connection with Dr. Wesener. Baum believes that this new organic iodid powder will enable us to give iodin in many cases where other preparations are not tolerated. It will accomplish all that has been claimed for potassium iodid without disordering the stomach or interfering with the general nutrition.

Denver Medical Times.

July.

60 *The Prevention or Amelioration of Vomiting During the Administration of Chloroform. E. Stuver.
61 Homicide Committed While in the Amnesic State. S. D. Hopkins.
62 *The Essential Features of a Practical Medical Registration Law. S. D. Van Meter.
63 Dr. F. J. Bancroft. Edmond J. A. Rogers.

60. **Chloroform Administration.**—Stuver finds that painting the nasal mucous membrane with cocain solution before chloroformization does away with the complication of vomiting which is sometimes so troublesome. He uses a 2 per cent. solution applied on a cotton-wrapped probe ten or fifteen minutes before beginning to give the anesthetic. He thinks it will be equally effective with ether.

62. **Medical Registration Laws.**—Van Meter gives an interesting discussion of the subject of medical registration boards and laws. First the composition of medical boards is considered. He holds that they should be made up of reputable practicing physicians, irrespective of school or pathy, nominated by medical societies and appointed by the governor. The most important of their powers would be the revocation of licenses for other reasons than ignorance or incompetency. As regards examination, he thinks the greatest injustice is done by requiring men eminent in the profession to be examined. He holds that there are points of weakness in the plan and is inclined to think recognition of the medical diploma from a good institution better than examinations. The adoption of a high minimum standard of education for the colleges by the licensing board would be a great improvement. Too little attention is paid to the moral side of the applicant's qualifications; an investigation of former records should be instituted in every case. If laws are to accomplish anything they should be enforcible; there should be no politics in the boards. In conclusion, he emphasizes the importance of a proper wording of the law, especially as regards the definition of the practice of medicine.

Medical Standard, Chicago.

July.

64 Tubercular Laryngitis. Homer M. Thomas.
65 *Treatment of the Secondary Infection of Pulmonary Tuberculosis. *John W. Foss.*
66 Sunstroke. William F. Waugh.
67 What Constitutes a Cure in Epilepsy? T. C. Wilson.
68 Pain and Its Indications. E. C. Hill.

65. **Tuberculosis.**—Foss finds Hubbert's antistreptococcic serum of the greatest value in combating the secondary effects of pulmonary tuberculosis, and he thinks it is indicated in all forms of streptococcic infection. That it does its work thoroughly, he says, is a fact. In administering the serum he injects 20 c.c. subcutaneously between the shoulders, following daily with 10 c.c. and examines the sputum for streptococci at least every three days, continuing the serum until the streptococci are eliminated, usually after 60 to 120 c.c. have been administered. There is a reaction, sometimes a simple urticaria with itching, sometimes pain and swelling of the joints and nervous phenomena, varying with the amount of toxemia. In acute cases there is little or no reaction, but cases that have been infected for years show greater effects. He would not hesitate to use this serum in much larger quantities if necessary and recommends his confrères to give the substance a thorough trial.

Kansas City Medical Index-Lancet.

July.

69 *A Gigantic Medical Fraud Detected and Exposed. John Punton.
70 Impressions Abroad During a Two Weeks' Sojourn in Spain. J. D. Griffith.
71 *Remedial Faults in the Editorial Work of the Journal. T. D. Crothers.
72 On the Early Use of Solid Food in Artificially-Fed Infants. John W. Kyger.

69. **Malingering.**—Punton reports an interesting case of malingering in a young man 22 years of age who claimed to have been knocked down by the falling door of a freight car and to have become practically idiotic. The case was tried twice and a number of physicians testified as to their belief in regard to his disability. On the second trial, a few months ago, a verdict of $35,000 damages was given by the jury. Dr. Punton was called into the case, and with the chief surgeon of the road, Dr. Cale, alone maintained the opinion that the individual was simulating the disorder. Dr. Punton's opinion was based on the lack of physical evidence of paralysis, loss of sensibility, the condition of the reflexes, etc., which did not agree with the claims made, and he also did not believe in his assumed mental condition. After the second trial a prominent lawyer gave testimony that before the alleged accident the young man and his mother had consulted him as to

the possibilities of getting up such a case, and asked his professional aid. He had refused this to them, but kept the matter to himself until he saw that the case had progressed so far that it did not seem advisable to him to keep silent longer. The judge set aside the verdict and ordered a new trial, turning the patient over to the physicians for further investigation. He was kept in a sanatorium under observation, and his friends were not allowed to see him. On the pretense that he was to undergo a surgical operation for examination of his brain, he was etherized, and in the stage of excitement talked freely. A second experiment was also performed similar to the first, and he finally made a full confession, and is now with his mother under heavy bonds after indictment for attempt to defraud. The outcome of the case thoroughly vindicated Dr. Punton's opinion expressed from the first, and testified to in the trial. The case is of interest, as having aroused considerable attention in the state where it occurred, the amount of damages obtained in the second trial, and especially on account of the success of the impostor in keeping up his imposition so as to deceive so many skilled physicians for so long a time.

71. **Editorial Faults.**—Dr. Crother's paper refers to editorial laxities, etc., in medical journalism generally.

Merck's Archives, New York.

July.

73 *The Treatment of Chorea. (Concluded.) L. Harrison Mettler
74 Rhus Toxicodendron and Rhus Poisoning. J. M. French.
75 *Summer Diarrhea in Children and Its Treatment. Leo Ratner.
76 An Index of Diseases, Alphabetically Arranged, with Their Modern Treatment. (Continued.) G. Bjorkman.

73. **Chorea.**—Mettler finds that arsenic is a standby in chorea, understanding by this the true Sydenham's chorea, not the multiple affections that have been occasionally described under this name.

75. **Summer Diarrhea of Children.**—The principal points of Ratner's paper are summarized in substance by him as follows: Summer diarrhea is not a difficult disease if common sense is used. The best substitute for mother's milk is properly modified cow's milk. When the stomach is very irritable all food should be withheld for from twelve to thirty-six hours. The first step in medical treatment is to empty the stomach and bowels thoroughly. For this castor oil, plain or in emulsion, is best. The most harmless intestinal astringent for children he holds is tannalbin, and the best antifermentative is ichthalbin, which two drugs are valuable additions to our materia medica. After the bowel has been thoroughly emptied, opium in small, carefully regulated doses is frequently of the highest value. For antipyresis, sponging with cold or lukewarm water should be preferred to any internal medication.

Atlanta Journal-Record of Medicine.

July.

77 *On the Treatment of Internal Strabismus. Dunbar Roy.
78 *Our House and Our Servant. H. McHatton.
79 X-Ray Treatment of Acne. Henry R. Slack.
80 Abdominal Surgery in the Private Residence. Marcus F. Carson.
81 A Nephrectomy, with Remarks. J. G. Earnest.
82 X-Rays in Treatment of Malignant Growths. Marcus F. Carson.

77. **Strabismus.**—Roy's ideas in regard to the treatment of strabismus are orthodox. He believes in operation only as a last resort after other methods, such as glasses, atropia, etc., have been employed. Whatever operative procedure is used should be done with the same care as in any other major surgical operation.

78. **Our House and Our Servant.**—The subject of infection and sanitation of houses is first noticed by McHatton, who gives points from his own experience. The next question which he considers is the servant question, which in the South is a serious one. The deteriorating influences which have acted on the blacks of late years and their habits of life are remarked on. They usually live independent of their masters and mistresses, who, after their work is done, have no control over them. The dangers of communicable diseases are serious. The only escape he sees would be to encourage the servant's remaining in his former relations, living on the premises and allowing an inspection of his physical condition and material welfare. The other alternative would be to make a physician's certificate essential to his employment, having it renewed from time to time.

American Practitioner and News, Louisville, Ky.

June 1 and 15.

83 Marasmus. Philip F. Barbour.
84 Lithemia. Charles Moir.
85 Intestinal Indigestion and Nephritis. H. H. Roberts.

Medical Age, Detroit.

July 10.

86 A Plea for a Broader Interpretation of Specialism. A. Thuner.
87 Neuroparalytic Keratitis. Thomas F. Keller.
88 A Case of Mental Disease Due to Fracture of the Skull, with Paralysis of the Right Facial Nerve, or to Syphilis, or to Both. M. L. Graves.

Northwestern Lancet, Minneapolis.

July 15.

89 The Present Status of Surgery of the Stomach. William J. Mayo.
90 The Circulation of the Internal Genitals Containing Myomata. Byron Robinson.
91 A Review of the Work Done for the Correction of Deformity of the Nose by the Subcutaneous Injection of Paraffin, with a Report of a Case of the Author's. H, McI. Morton.
92 Obstruction of the Bowel Relieved by Inguinal Colostomy. James E. Moore.

Journal of Medicine and Science, Portland, Me.

July.

93 X-Rays in the Treatment of Cancer. E. T. Nealey.

New Yorker Medicinische Monatschrift.

May.

94 Rückblicke auf den 14 Internationalen Medicinischen Congress. W. Freudenthal.
95 *Neue Bestrebungen in der Therapie. Professor Bouchard.

95.—See abstract in The Journal, xl, p. 545.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

June.

96 Pulmonary Tuberculosis; Early Diagnosis and Treatment. W. L. Harris.
97 The Sequelæ of Malaria. H. B. Mahood.
98 Preparation of the Woman for Confinement. Lewis Holladay.

Medical and Surgical Monitor, Indianapolis.

July 15.

99 Duodenitis. Simon P. Scherer.
100 Exophthalmic Goiter; Questions and Answers Pertaining to Disease. John E. Lockridge.
101 Rheumatism. I. B. Washburn.
102 Clinical Diagnosis of Cancer of Uterine Cervix. Thomas B. Eastman.
103 A New Treatment for Papilloma. Alfred S. Jaeger.

Colorado Medical Journal, Denver.

April.

104 Colorado Laws Relating to Criminal Abortion. A. B. Seaman.
105 The Attitude of the Profession Toward Abortion. Edmund J. A. Rogers.
106 Remedies for Criminal Abortion. H. G. Wetherill.
107 The Practical Working of the Law Against Criminal Abortion. H. N. Hawkins.
108 Suggested Amendments to the Law Concerning Abortion. Charles R. Brock.

Mobile Medical and Surgical Journal.

June.

109 Our Duty to the Pregnant Woman. E. B. Ward.
110 Some Pathologic Conditions of the Period of Gestation. T. H. Frazer.
111 The Proper Management of Cases of Labor. W. H. Bell.
112 Puerperal Infection. M. S. Davie, Jr.
113 Cystitis in the Female. J. P. Borden.

American Medical Compend, Toledo.

July.

114 The Malpractice Laws of Ohio. W. J. Gillette.
115 Pelvic Hematocele; Cause and Treatment. Joseph F. Fox.
116 The Milk Supply of Toledo, with Demonstrations of Simple Forms of Milk Analysis. L. Marsh Dolloway and Albert Steinfeld.

Vermont Medical Monthly, Burlington.

June 25.

117 The Manic Depressive Psychosis and Some of Its Etiologic and Pathologic Phases. Walter D. Berry.

Journal of Advanced Therapeutics, New York.

July.

118 Some Obstacles to the Progress of Electro-Therapeutics. Charles O. Files.
119 The X-Ray as a [illegible] ohn W. Daniel.
120 The Therapeutic [illegible] nts of High Potential and Frequency. [illegible] olcomb Burch.
121 The Treatment of [illegible] by Exercise. Watson L. Savage.
122 Undeveloped Psychic Powers. Adelaide R. Kirshner.

The Post-Graduate, New York.

July.

123 Medicine and Surgery in the Philippines. Walter D. Webb.
124 A Review of the Para-typhoid Infections. George E. McLaughlin.
125 A Case of Puerperal Sepsis, Treated with Intravenous Injections of Formalin. George L. Brodhead.
126 On the Use of the Eustachian Catheter. D. B. St. John Roosa.
127 The Need of Better Type in Books for Children to Learn to Read By. Lyle Pickering.

Pacific Medical Journal, San Francisco.

July.

128 Clinical Lecture (Delayed Union of the Upper Third of Femur, etc.). A. W. Morton.

Nash Journal of Medicine and Surgery.

June.

129 Pain as a Diagnostic Factor. John S. Cain.

Detroit Medical Journal.

July.

130 Sixty-seven Years of General Practice, with Some Reminiscences of Giants of the Profession Half a Century Ago. G. B. Russel.
131 Medical Conditions in the Early Forties. Morse Stewart.
132 A Half Century of Professional History. Herman Kiefer.
133 Comments and Additions. Drs. Donald MacLean, Samuel P. Duffield, James Samson, Theodore A. McGraw and G. B. Russel.

Medical Fortnightly, St. Louis.

July 10.

134 Location of a Bullet in the Knee by the X-Ray, and Its Removal. Edwin Walker.
135 Influenza. M. P. Overholser.
136 Extrauterine Gestation: Report of Three Cases. C. E. Ruth.
137 Briefs on Mental Diseases. F. Savary Pearce.
138 Report of a Case of Thoracic Aneurism of Unusual Size. Walter C. G. Kirchner.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

July 11.

1 The Scottish Medical Corporations and the Public Weal: How They Might Develop a Health Conscience. T. S. Clouston.
2 *An Account of Eight Cases of "Pressure Pouch" of the Esophagus Removed by Operation. Henry T. Butlin.
3 *The Nature of the Symptoms in Appendicitis. James Mackenzie.
4 *On the Occurrence of Vomiting During Rectal Alimentation. H. D. Rolleston and A. J. Jex-Blake.
5 A Case of Hernia of the Bladder Associated with an Inguinal Hernia. H. J. Curtis.
6 *The Necessity of Shortening Large Nerves When Amputating. Walter G. Spencer.
7 Brachial Neuralgia. Robert M. Simon.
8 History of a Case of Cerebral Tumor Eight and a Half Years After Removal. Thomas Oliver.
9 *The Value of Lumbar Puncture in General Practice. Herbert Rhodes.
10 A New Method of Counting the Corpuscles of the Blood. W. Mersh Strong and C. G. Seligmann.
11 *The Iodoform Treatment of Tuberculous Disease. Middleton Connon.

2. **The Pressure Pouch of the Esophagus.**—Butlin reports eight cases which indicate to him that this anomaly is by no means so rare as he at first thought. He reviews the symptoms characterizing the condition as published in a former article in 1898, namely, *the return of fragments* of undigested food at varying periods, even to a day or two after eating; the gurgling up of gas from the throat, particularly when pressure is made on the left side of the neck low down, which is especially distressing to the patient. There may also be a distinct bulging in this situation when food is taken, though this is not a constant symptom. A bougie is arrested about nine inches from the teeth, and if this is of curved metal, it can sometimes be felt through the skin at the posterior triangle of the neck, almost always on the left side. Other symptoms may be present, such as wasting, cough, etc. The operation is not more dangerous to life than a cure will justify. The method was described in his former article. He offers here the following suggestions:

1. In order to be sure that there is no stricture of the esophagus below the opening of the pouch, a bougie should be passed into the stomach from the *mouth at* the time of operation. If this can not be done before the wound is made in the neck, the pouch should be exposed, separated from the surrounding tissue, and drawn upward out of the wound. Then, with a little manipulation, a bougie can be passed over its mouth.

2. If the pouch is of long standing and of large size, a soft tube should be passed into the mouth and stomach and retained as long as necessary for feeding. If this is impracticable on account of the patient's resistance or otherwise, it should be passed over a guide every time food is taken. Otherwise the food will pass out of the wound in the neck. If this still can not be done, then the tube should be introduced into the stomach through the wound and retained there until healing has nearly finished.

3. The less the tissues below the pouch are disturbed the better, to avoid septic inflammation and so on.

4. No attempt should be made to close the external wound, however carefully the neck of the pouch has been stitched up. It should be drained by means of a soft rubber tube. On the other hand, it is very desirable to close the opening into the esophagus for, although the stitches always give way in three or four days, the surrounding tissues are by this time sufficiently recovered to render spreading septic infection much less probable.

The *operation* seems *to produce* a speedy, complete and permanent cure of the disease.

3. **Appendicitis.**—Mackenzie describes and explains the symptoms of appendicitis according to the distribution of nerves, etc., hyperesthesia, visceral muscle reflex, bladder symptoms, colic, etc. He points out that it may be difficult to differentiate appendicitis from other complaints. The commencing attack has been mistaken for lumbago, rheumatism and other visceral affections.

4. **Vomiting During Rectal Feeding.**—Rolleston and Jex-Blake report cases which have been observed where vomiting occurred during rectal feeding, and speculate as to its cause. They find a certain proportion, say about 27 per cent., of patients with gastric ulcer vomit when on an exclusive rectal diet. They think in some instances this may be due to oral infection, and in others may possibly be the reflex result of rectal injections.

6. **Shortening the Large Nerves in Amputations.**—Spencer points out from his notes of cases in the Westminster Hospital that where the practice of drawing out the large nerves and cutting off a piece has been omitted there has been an indefinite delay in the patient's recovery. Continuous pain in the stump prevents the patient from wearing an artificial limb *and finally resection of the affected parts is necessary.* The whole chronic trouble is connected with the nerves which are left too much exposed.

9. **Lumbar Puncture.**—The following conditions are enumerated by Rhodes as those in which lumbar puncture may be useful for the patient and practitioner. Each is illustrated by cases. 1. The relief of pain and headache, illustrated by a case of gliosarcoma, where the head pain was unrelieved by drugs. Removal of a couple of ounces of spinal fluid gave complete relief. 2. *Coma is diminished. Consciousness may* return after coma has been established by the increase of intracerebral pressure. A lumbar puncture may indicate the necessity or otherwise for operation. In several cases of post-basal meningitis, *a child apparently dying* has been tided over and ultimately recovered when lumbar puncture has been systematic*ally employed*, reducing the intracranial pressure. If properly used it may be of value in aiding in the diagnosis. It obviates the necessity of nasal feeding and other tedious nursing procedures. In cases of comatous conditions its relieves the brain symptoms.

11. **Iodoform in Tuberculosis.**—Connon reports two cases of tuberculous disease of the joints cured by injections of iodoform emulsion, according to Squire's formula. About a dram of emulsion was injected every other day into the joint affected, *through the sinus*, with an ordinary glass syringe. By keeping the nozzle of the syringe firmly against the sinus opening the emulsion was allowed to act on the joint for three to five minutes. The sinus was subsequently covered with a pad of dry double cyanid gauze, and left untouched until the next injection, two days later. In both cases there was a surprising and immediate lessening of the discharge and *improvement of the* general health. The pain caused at first was only temporary, and the patients have remained well.

The Lancet, London.

July 11.

12 *The Causes, Prevalence and Control of Pulmonary Tuberculosis. H. Timbrell Bulstrode.
13 The Scottish Medical Corporations and the Public Weal: How They Might Develop a Health Conscience. T. S. Clouston.
14 Observations on Mastication. (*To be continued.*) Harry Campbell.
15 *The Treatment of Aneurism by Subcutaneous Injection of Gelatin. Guthrie Rankin.

16 A Case of Richter's Hernia. James W. Fraser.
17 *The Relation of the Dental Profession to Public Health. Arthur Newsholme.
18 A Case of Laryngeal Diphtheria; Tracheotomy; Death Six Weeks Later from Pressure of an Abscess Surrounding the Trachea. William Mair.
19 The Uses of Sodium Salicylate in the Treatment of Malarial Fever. A. D. E. Kennard.
20 Smallpox in the Fetus. Allan Warner.
21 Retention of a Bullet in the Thigh for Two and a Half Years Seymour F. Gibbs.
22 Arsenical Idiosyncrasy. John Phillips.

12. **Tuberculosis.**—Bulstrode notices the theories of infection and the exaggerated popular ideas in regard to it. He considers tuberculosis only slightly communicable, and quotes sanitarium experiences. The frequent non-recognition of tuberculosis is also noted. He says, think of the revelation of the general application of the tuberculin tests. Statistics are given showing the relation of poverty to tuberculosis and the comparative slight incidence among the well-to-do. The relation of alcohol to the disorder is considered at some length; that there is an association would seem from the evidence conclusive. He thinks, however, that many of the alcoholic tuberculous cases are primarily predisposed by constitution. In insanity a very large proportion of the patients die from tuberculosis, particularly those within institutions. He thinks more attention should be paid to increase resistance and improve the condition.

15. **Gelatin in Aneurism.**—Four cases are reported by Rankin. He says that while the experience of so small a number is not enough for drawing conclusions, it shows that gelatin injections may with proper precautions be given subcutaneously with safety. They produce a marked and speedy decrease in all of the subjective and some of the objective symptoms of internal aneurism. This relief is only explainable on the theory of diminution of pressure effects by shrinkage in the aneurismal sac. This diminution in size accompanied with marked increase in the resistance of the tumor wall could be distinctly determined in three of the cases treated. The after histories of the patients so far as they can be obtained show that the beneficial results are permanent.

17. **Dental Hygiene.**—The importance of dental health to the community is shown by Newsholme, who gives figures showing the increased number of rejected recruits in England on account of defective teeth, also the statistics as regards the prevalence of dental caries in the different races at different periods. It is evidently much more common in civilized than in uncivilized states. While he questions and reserves opinion in regard to many of the alleged causes, he says the most important preventive measures are: 1. The teaching of hygiene should be compulsory in the senior classes of all elementary schools and the hygiene of the mouth be an important part of the subject. 2. The enforcement of daily cleansing of the teeth should be organized in all residential schools. 3. The medical profession can stimulate dental reform by examining the teeth of all children attended by them and inculcate the importance of regular cleansing and early attention to caries. 4. Every industrial and other school authority should employ a dentist to treat the teeth of children and organize methods of dental hygiene.

The Practitioner, London.

July.

23 *Introductory Essay. T. Clifford Allbutt.
24 *The Occurrence of Gout in the United States. Thomas B. Futcher.
25 *Gout in the Tropics. Alexander Crombie.
26 *Gout as It Occurs Among the Poor. F. S. Toogood.
27 *On the Relation of Gout to Granular Kidney and to Lead Poisoning. Samuel West.
28 *The Causation, Prevention and Treatment of Gout. Alexander Haig.
29 *Metabolism in Gout, and the Need for Combined Investigation I. Walker Hall.
30 *Notes Respecting the Dietary for Goutily-Disposed Persons. Dyce Duckworth.
31 *The Treatment of Gout in Its Various Forms. Arthur P. Luff.
32 *Balneologic Treatment of Gout, with Special Reference to Bath. Gilbert A. Bannatyne.

23 *et seq.* **Gout.**—This issue of the *Practitioner* is devoted to a symposium on gout, which is introduced by an essay by Dr. Allbutt, who summarizes in a general way the papers that follow.

24.—Futcher gives his views as to the occurrence of gout in the United States, where he thinks it is often unrecognized.

25.—Crombie points out the lessened occurrence of gout in the tropics, which he explains by a lowered tissue metabolism required to raise the temperature of the body to a smaller number of degrees and in natives to the less nutritious nature of their diet.

26.—Gout as it occurs among the poor is treated of by Toogood, who attributes it principally to beer drinking.

27.—The relation of gout to granular kidney is discussed by West, who thinks that, like lead, it may produce chronic changes in the kidney, but does not cause interstitial nephritis. The presence of a granular kidney, however, greatly increases the liability of the patient to gout on the one hand and lead poisoning on the other, or both together; likewise greatly increasing the gravity and risk.

28.—Haig reiterates his views as to the importance of diet in gout, which he considers is but a symptom of poisoning by flesh and tea.

29.—Hall's paper is on the metabolism of gout. He believes in repeated purin determinations in each case and holds that if the exogenous or endogenous purins are delayed or retained in the system, their dilution in the tissues by large quantities of water or harmless fluids offers the best assistance to the renal cells for effective excretion.

30.—The diet in gout is treated of by Duckworth, who considers it a matter of individual study in every case. Slight causes of any kind will excite the disease in those predisposed to it.

31 and 32.—Luff and Bannatyne end the series with articles on the treatment of gout and its balneologic management.

Journal of Tropical Medicine, London.

July 1.

33 *Sleeping Sickness in the Light of Recent Knowledge. Louis W. Sambon.
34 *The Dengue: A Study of Its Pathology and Mode of Propagation. H. Graham.

33. **Sleeping Sickness.**—Sambon notes the spread of sleeping sickness and its possible extension into other races than the negro. He notes its symptoms and reviews the theories of its origin, including the later discovery of Castellani of the trypanosoma, the causative theory of which he thinks is somewhat favored by facts.

34. **Dengue.**—See editorial in The Journal, July 25, p. 264.

Annales de Dermatologie et de Syph., Paris.

Last indexed XL, page 1403.

35 (IV, 4.) Contribution à l'étude de l'hydrocystome (avec une note sur la granulose rubra nasi). A. Lebet (Jadassohn's clinic, Berne).
36 Summer Desquamation of the Palms. A. Carayon (Bordeaux).—Desquamation estivale en aires des mains.
37 (No. 5.) Dyskératoses congénitales et leurs associations morbides. E. Lenglet.
38 Cheloide du lobule de l'oreille. Son origine infectieuse. Récidive apres ablation cirurgicale. Guérison par l'eléc- tr[illegible] 'errin.
39 (No. [illegible] histologique sur 6 cas de syphilides mi[illegible] mulant le lichen scrofulosorum et la[illegible] Jonitescu. Colored plates.
40 De l'[illegible] chronique circonscrit et du lichen sin[illegible] C. Audry.

Archives de Neurologie, Paris.

Last indexed XL, page 1175.

41 (XIV, April.) Sur quel[illegible] iniques de la névralgie faciale et s[illegible] lectricité. A. Zimmern. (Commence[illegible]
42 Fibromatose et paralysie [illegible]

Deutsche Med. Wochenschrift, Berlin and Leipsic.

43 (XXIX, 22.) *Pseudo-Hemisystolie und postmortale Hemisystolie. H. E. Hering (Prague).
44 Ueber ein fur menschliche Placenta spezifisches Serum. W. Liepmann.
45 *Combined Tuberculin Treatment of Tuberculosis. J. Mitulesco (Bucharest).—Die Vortheile der combinirten Behandlung bei der chronischen Tub (Commenced in No. 21.)
46 *Giant Growth. J. Wieting.—Zur Frage des allgemeinen Riesenwuchs. (Commenced in No. 21.)
47 New Vaccine Holder. Grimm (Tirschtiegel).—Neuer Lymphbehälter.
48 (No. 23.) *Ueber Tumoren und Pseudotumoren in der Adduktor-Gegend. V. Czerny (Heidelberg).
49 *Resection of Lower Jaw. Tilmann (Greifswald).—Ueber Unterkieferresektionen.

92 *Phosphorescence-Producing Properties of Radium. G. Holzknecht and G. Schwarz.—Ueber Radiumstrahlen.
93 (No. 26.) *Zur Theorie der Inkubations-Zeit. Clemens v. Pirquet and B. Schick.
94 Zur Meningitis cerebrospinalis suppurativa. J. Donath (Budapest).
95 Ueber Bakterien-Befunde in der normalen männlichen Urethra und den "Syphilis-Bacillus" Max Josephs. H. Pfeiffer.
96 Yeast and Formalin in G [illegible] Popescul.—Ueber einige neuere Heilmittel [illegible]
97 Forceps at the Chrobak O[illegible] Sachs.—Bericht über die Zangen-Operationen der Klinik Chrobak in den letzten 10 Jahren. (Commenced in No. 25.)
98 (No. 27.) Zu Riedel and Kehrs Ansichten über Pathologie und Therapie des Gallensteinleidens (of biliary lithiasis). F. Fink (Carlsbad).
99 Gruber-Widal Serum-Reaktion bei Ikterus. L. Langstein.
100 Neue Früchte der Ehrlich'schen Toxin-Lehre. M. Gruber.
101 *Radium Treatment of Malignant Tumors and of Cutaneous Affections. A. A. Exner.—Radiumstrahlung.
102 *Radium Treatment of Cutaneous Affections. G. Holzknecht.—Wirkung der Radiumstrahlung auf Hautkrankheiten.
104 *Blastomycosis. Brandweiner.

61. **Hereditary Icterus.**—Pick describes a family in which the mother and three of the children exhibited icterus. He attributes it to some congenital communication between the lymphatic and biliary passages or to some congenital insufficiency of the liver cells, entailing paracholia. In conclusion, he reviews the German and English literature on the subject.

63. **Syphilis in the Mothers and Newborn.**—Mracek analyzes his experience with syphilis in the newborn with a profusion of details. He has become convinced that the earlier the fetus is infected the more serious the results. Neither the age nor the form of the maternal syphilis allows any positive dictum as to the outcome of the pregnancy. In 11 cases of non-proven syphilis on the part of the mother (and thus possibly paternal infection), the placenta was found pathologic in 9 instances. This fact is not a decisive argument in regard to the mode of paternal transmission, but is certainly worthy of attention. The protracted infecting power of the mother and its deleterious influence on the offspring impose energetic treatment of every pregnant woman, even when the syphilis is latent. He urges for collection of data in regard to cases of syphilitic mothers who have borne healthy children and also in regard to early abortions. The article is a valuable contribution to the pathologic anatomy and the clinic of hereditary syphilis, for which Mracek has been collecting material for twenty years. In 11 of the cases with early abortion or maceration of the fetus, not a trace of syphilis could be detected in the mother. In 22 others with syphilis probable but not certain, not a single child survived to term, as was also the case in 24 instances in which infection and conception occurred simultaneously, and likewise in 22 in which infection occurred shortly before conception. He tabulates these and various other groups, and discusses the alternating births of syphilitic mothers, the heredity of inveterate syphilis, and numerous other questions. His experience establishes that the virulence does not become attenuated with time, and that even in the latest gummatous stage the mothers may bear children virulently infected.

64. **Paroxysmal Hemoglobinuria.**—Kretz explains this condition on the principle of amboceptors and complements in the blood. The attack of hemoglobinuria, he suggests, may be due to an accumulation of the complement under certain influences in an individual already unduly loaded with amboceptors. The result is hemolysis with consecutive hemoglobinuria.

68. **Idiopathic Pernicious Anemia.**—In the case reported the patient, a man of 32, had been healthy until a gastrointestinal affection developed, followed in three months by signs of progressive and speedily fatal anemia. At the autopsy nothing pathologic could be found except in the alimentary canal. Krokiewicz ascribes the disease in this case to constant absorption of enterotoxins, first taken up in the portal vein and passing thence into the general circulation. He does not attempt to decide whether the destruction of the erythrocytes was due to the direct action of the absorbed intestinal toxins on the blood cells or whether there might not have been some special affinity between the toxins and the potash in the cells. During the fifty days in the hospital the blood never exhibited the picture of essential progressive pernicious anemia, no normoblasts nor megaloblasts, but only moderate poikylocytosis, modification of the stainability of the red corpuscles and a low proportion of hemoglobin corresponding to the diminishing numbers of reds which were at first 460,000 with 25 per cent. hemoglobin, and towards the last 240,000 with 9 per cent. hemoglobin. The leucocytes numbered 6,000 to 1,600, but behaved normally in every respect. Only Quincke and Grawitz have reported smaller proportions of red corpuscles, 142,000 and 200,000.

70. **Tests of Smoke of Asthma Remedies.**—Netolitzky has been experimenting with and analyzing the smoke of belladonna, hyoscyamus, *Datura stramonium* and *Lobelia inflata*, as remedies for asthma, in the form of cigars, cigarettes or smoked in a pipe. He was able to demonstrate both chemically and still more positively by directing a stream of the smoke on the eyes of rabbits, that the essential principle does pass into the smoke. The results were only faintly positive with the *Hyoscyamus niger*, and were puzzling with belladonna, but with the stramonium and the lobelia the effect on the rabbits' eyes was unmistakable.

80. **Operative Treatment of Hemorrhage After Tonsillotomy.**—Burkard cites the various methods of arresting threatening hemorrhage in these circumstances and describes in detail that practiced by the late Professor Nicoladoni. In the rare cases in which all other measures proved ineffectual he made an incision in the neck, commencing about 1 cm. below the ear and proceeding as if to remove a neoplasm in the tonsil, the lower jaw drawn up and the stump of the tonsil presented in the incision by pressure through the mouth. The tonsillar vessels are ligated, but the large vessels behind need not be touched. The styloglossus must be drawn up out of the way or severed. The tonsil lies directly in front of the insertion of the fibers of the stylopharyngeus in the swallowing musculature. The bleeding is carefully staunched, the pharynx opened, the stump of the tonsil extirpated and the pharynx closed immediately by suturing together the pillars of the fauces either through the incision or through the mouth. This intervention is more tedious and complicated than ligature of the carotid, but by observing the directions in detail, it can be rapidly done and is a much less serious operation than ligating the carotid, while it ensures arrest of the hemorrhage with much greater certainty.

81. **Physostigmin in Post-Operative Meteorism.**—Moszkowicz has found this drug magical in the relief of post-operative paralytic ileus. His experience includes five cases. He expatiates on the dangers of this pseudo-ileus which is one cause of death after laparotomies, and has also been observed after herniotomy and vaginal operations. The autopsy discloses that the peritoneum is intact and that the trouble is evidently the result of a vicious circle, venous hyperemia, edema of the intestinal wall, paralysis of the intestinal musculature, meteorism and disturbances in absorption. This vicious circle can be broken up by physostigmin. In his experience a subcutaneous injection of .001 gm. of the physostigmin salicylate was well tolerated by 3 extremely debilitated patients. In the 2 other cases this amount was given in two doses. The extreme distension of the intestines was promptly relieved, and in 2 of the cases the measure was life saving. No disagreeable by-effects were noted in any organs. The blood pressure was distinctly increased, the drug acting on the heart action like camphor.

82. **Serum Treatment of Scarlet Fever.**—This communication was presented at the Madrid Congress and the nine diagrams give an oversight of the effects of the treatment in the 112 cases in which it was applied. None of the children died that were injected on the first and second day of the disease, although there were 8 very severe cases in the 24 injected the second day. Only 17.4 per cent. died of the 23 injected the fourth day, and 30 per cent. of those injected the fifth day, after which the mortality rose to 50 per cent. of the 4 not injected until the ninth day, the latter all very severe cases. A single, large injection the first or second day affords the best results.

83. **Sign of Rachitis.**—Neurath gives a photograph of a chubby hand in which the fingers show marked deformity of

the bones, the phalanges appearing to be swollen, giving the fingers a spindle-shaped appearance between the joints. He has observed it only in rachitic children, and usually in those under a year old. When noted in older children the rachitis is always in a severe form. He was never able to discover the lesion in non-rachitic children or in those only slightly affected. It was always accompanied by enlargement of the epiphyses and ends of the ribs. He found that he could diagnose rachitis in children before examining them elsewhere, by merely feeling for the spindle-shaped enlargement of the phalanges. It subsided under "phosphorus cod-liver oil" in conjunction with the other symptoms of the rachitis.

86. **Cell-Division Under the Roentgen Rays.**—G. Schwarz of Vienna reported at the local medical society that he had been studying the influence of the *x*-rays on living sea urchin's eggs. In no instance was it possible to detect any inhibiting action on the part of the rays on the normal cell division. These and similar researches on other animal tissue have convinced him that the inhibiting influence of the rays which Lopriores has established in respect to plant cells, does not exist in respect to animal cells. The influence of the rays on tumors, therefore, can not be explained on this assumption. He thinks the action of the rays may possibly be explained by assuming that they render certain substances, especially albumin, insoluble. The phenomena observed with the *x*-rays, Finsen light treatment and exposure to the sun for hours on a glaring snow field, may all be of the same nature, i. e., the rendering insoluble of certain metabolic products in the cells whose further elaboration and elimination are thus hindered. This stoppage gives rise to the chronic affection following a period of incubation which we designate as solar erythem and Finsen and Roentgen dermatitis. The sea urchin's eggs were exposed to *x*-rays which blackened a photographic plate under the same conditions in less than a minute.

88. **Yohimbin as an Anesthetic.**—A recent death at Vienna after the use of cocain causes surgeons to be specially interested in the newly-discovered anesthetic properties of yohimbin. Strubell found that the local application of a 1 per cent. solution induced undoubted hypesthesia to anesthesia in the upper air passages, amply sufficient for operations that did not go very deep into the tissues. This application is absolutely harmless and does not blanch the tissues, but induces a moderate hyperemia without contraction of the tissues or severe primary hemorrhage at the time or later. He suggests that its combination with adrenalin might prove especially advantageous for rhino-laryngologic work.

90. **Roentgen Treatment of Tumors.**—Exner reports 3 cases of inoperable mammary cancer unmistakably benefited by the *x*-rays. In one case the lesion apparently healed. In a case of melano-sarcoma the cutaneous metastases were treated by the *x*-rays and many of them subsided under their influence.

92. **Phosphorescent Power of Radium Rays.**—It has been asserted that totally blind persons are able to see the radium light. They not only perceived the phosphorescent radium screen, but were able to distinguish the silhouettes of coins, keys, etc., placed on the screen, the same as a seeing person. Holzknecht and Schwarz think these facts can be explained in two ways: Either the radium rays passing through the tissues reach and irritate the optic nerve and stimulate the relics of vision left in it—in which case the sound eye would also experience the same tendency, and the blind person, after a little practice, might be able to perceive any dark object on a bright background. Tests in this direction have already been made, and Heller reported two years ago that it is possible to save some degree of vision by exercises of this nature. The same results can be attained with any light, and the radium has nothing specific to do with the phenomenon. It was observed with the Roentgen rays and interpreted in the same erroneous manner at first. The other, and the correct explanation, they believe, is that the phenomenon is due to the transformation of the energy of the radium rays into objective phosphorescence. This power of inducing phosphorescence in other bodies is possessed by the radium rays to a remarkable extent. No screen nor chemical is required; any animal tissue whatever, hairs, bone, muscle, a drop of water, a scrap of sugar, but especially the human epidermis, are rendered more or less vividly phosphorescent under the action of the radium rays. They believe that no one else has called attention to this property of radium. This explanation of the vision induced in the blind by radium is confirmed by the localization of the phenomenon. When the radium is applied to the right, the visual sensation is on the right side, applied to the left, above or below, it is respectively on the left or above or below to correspond. The radium rays evidently render the sclerotic phosphorescent, and this phosphorescence is seen by the point of the retina opposite to it. When a visual sensation is experienced from compression of the eyeball, the source of the light is referred to the point opposite that from which the light compression proceeds. This is directly the reverse of what is experienced from the radium.

93. **Theory of the Period of Incubation.**—Pirquet and Schick relate clinical and experimental researches which demonstrate that an organism reacts more promptly to a renewed infection or intoxication than it did the first or previous times. That is to say, the incubation period is shorter. They theorize from this fact that the pathogenic substance has *per se* no power to induce the consecutive sickness. This follows when the organism has had time to elaborate certain products under the influence of the pathogenic substance, which in turn modify the latter. When this modification has reached a certain degree the symptoms begin to appear.

101. **Radium Treatment of Carcinoma.**—Exner exhibited from the late Professor Gussenbauer's clinic a case of carcinoma of the mouth and two of melano-sarcomata, at the meeting of the local medical society, June 26. (See editorial, THE JOURNAL, July 11.) Each had been treated with the radium rays, applying the radium in a capsule fastened to the spot with adhesive plaster. One melano-sarcoma had been removed three years before, but numerous small metastases had been noticed for eight months, shimmering black through the skin. These nodules were treated once each with the radium for five to twenty-five minutes. A dermatitis followed, the redness first perceptible after two to forty-eight hours. None of the nodules showed much change that had been treated for only fifteen minutes or less, but all the others grew perceptibly smaller, and some of them retrogressed completely. The nodules disappeared before the superficial tissues exhibited the necrosis from the action of the rays. In one case an epithelioma at the corner of the mouth recurred after three operations three and six years apart. The outer surface formed a protruding ulcer about the size of a quarter, that could be palpated as a hard tumor the size of a hazel nut, not definitely circumscribed. A second tumor was also observed in the neck. The capsule containing the radium bromid was protected from moisture by a rubber cot, and the patient applied it himself to the lesion on the mouth for fifteen to twenty minutes. The applications were made six times in less than a month. In seventeen days the tumor had perceptibly diminished in size and the ulcer began to heal over. No further visible reaction was observed at any time. The tumor rapidly subsided after this, and by the end of the month had apparently vanished. In the third case treated with the radium the same retrogression of the malignant tumor was realized.

102. **Radium Treatment of Cutaneous Affections.**—Holzknecht also exhibited at the same meeting several cases of cutaneous affections treated with the radium rays, one application each. One was a case of psoriasis gyrata of the entire body, which had been nearly cured with the *x*-rays and the cure was completed by the application of the radium. Very slight and brief application of the *x*-rays (2 H) are enough to cure psoriasis. The patches heal, while the sound skin is not affected by the applications. The same is true of the radium. A minute's application was amply sufficient. Recurrences will probably follow as after every method of treating psoriasis. In a case of lupus hypertrophicus one patch was cured with the *x*-rays and one with the radium. The latter was applied to the spot twice, at a month's interval, for seven minutes at a time.

The similarity of the action of the two kinds of rays was here striking, and the radium was superior, if anything, and can be applied to the mucous membranes. An epithelioma on the cheek also rapidly subsided till only a trace of infiltration around the edge still persists after three applications of the radium capsule for five minutes each. The most remarkable of all his cases was an extensive flat telangiectasia covering the entire left arm. He comments on the differences between the Becquerel and the Roentgen rays, laying special stress on the histologic studies of ray dermatitis which the Neisser school has published, Scholz's thesis in particular. The latter is a complete monograph on the histology of Roentgen dermatitis in man and animals. He has shown that the Roentgen rays cause degenerative processes in the cells of the *intima* of the blood vessels. The action of the radium rays seems to be identical, only much more intense. As a consequence of the degeneration there ensues a rapid dilation of the capillary and precapillary vessels. In the case of telangiectasia described, the radium capsule was applied for ten minutes each at eight various points on the nevus, while the parts between received only the small quantity of the rays that passed through the sides of the capsule. When exhibited, at these eight points there were corresponding small patches, .5 cm. in diameter, of perfectly normal, tender, white skin in the midst of the nevus vasculosus. Applications of the Roentgen rays had no such effect, but merely slightly blanched the points.

104. **Blastomycosis.**—Brandweiner exhibited at the same meeting a case of what he believed to be blastomycosis "in the sense of the Americans," and two others were reported by himself and Oppenheim. The latter stated that only 45 such cases have been published, and all but 2 in America, but he is convinced that many cases diagnosed as lupus verrucosus, epithelioma or syphilis must have been in reality cases of blastomycosis. Differentiation is important as potassium iodid is an energetic and certain specific against this affection.

Riforma Medica, Palermo.

Last indexed XL, page 1547.

105 (XIX, 12.) Relations Between Recurring Epidemics of Malaria. G. B. Mariotti-Bianchi.—Sulla malaria nella guarnigione di Roma dal gennaio al luglio 1902, etc.

106 (No. 13.) Reduplication of Second Sound. U. Gabbi.—Lo sdoppiamento del secondo tono nella stenosi mitralica.

107 *Contributo allo studio della setticemia da micrococco tetragono nell' uomo (in man). L. Fornaca (Turin). (Commenced in No. 12.)

108 (No. 14.) Compensation in Experimental Heart Defects. L. Ferrannini.—Il compenso nei vizii cardiaci acuti sperimentali.

109 Azione simultanea delle sostanze proteiche del bacillo tifogeno e della tossina difterica. F. Stinelli.

110 *Action of Suprarenal Extract in Gastrointestinal Atony. U. Baccarani and A. Plessi.—Ricerche cliniche sull'azione dell' estratto di sostanza midollare delle capsule surrenali (paraganglina Vassale) nell' *atonia gastroint.*

111 (No. 15.) *Hemostasis in Resection of Spleen. L. Girolamo. —Emostasi nelle resezioni della milza.

112 *Richerche sperimentali e cliniche sopra 2 casi di emoglobinuria parossistica. G. Mattirolo and E. Tedeschi. (Commenced in No. 13.)

113 Note di anatomia topografica per l'innesto della vena porta con la cava ascendente (for anastomosis of venæ porta and cava). G. Russo-Travali.

114 (No. 16.) Emigration of Elements of Blood in Leukemia. F. Schupfer.—Sulla emigrazione degli elementi del sangue nei trasudati ed essudati dei leucemici. (Commenced in No. 15.)

115 *Tonic Treatment of Epileptics. U. Alessi (Pisa).—Contributo alla cura dell'epilessia.

116 Alcune considerazioni sulla patogenesi della corea del Syndenham. A. B. Gianasso.

117 (No. 17.) Contributo allo studio della nevrasthenia infantile. L. Cappelletti.

118 L'acido picrico nell' uretrite blenorragica. F. Re.

119 (No. 18.) Experimental Lead Poisoning. G. Fasoli.—Sulle alterazioni anatomiche nell' avvelenamento sperimentale da piombo. (Commenced in No. 17.)

120 Sopra 2 casi di psicosi da ileo-tifo. M. Foa.

107. **Septicemia from Micrococcus Tetragonus.**—Fornaca describes the case of a man of 45 who for three months exhibited chills and remittent fever of a pyemic type with much emaciation, a hemorrhagic pleural effusion and hypertrophy of the liver and spleen. Repeated exploratory puncture was negative, but a parasite supposed to be the white tetragonus was found constantly in the blood, in the pleural effusion and in the urine. The cultures on the most varied media were always white until the infection began to decline, when they became yellowish. The red corpuscles were somewhat altered, the hemoglobin low, and the whites numbered a third more than normal. The treatment instituted was endovenous injections of sublimate, and under their influence the proliferation of the bacteria in the blood was arrested, and they finally disappeared, while the blood rapidly regenerated, the number of whites subsided to normal, and the liver resumed its normal size. Before resorting to the sublimate, various other measures had been tried, but with no effect. The endovenous injections of 2 to 4 mg. of corrosive sublimate were repeated every day from April 22 to May 3, with marked influence on the temperature curve. The first four days there was a chill and fever to 40 and 40.5 C., but the temperature gradually subsided, and after the eleventh day there was almost complete apyrexia, but the symptoms still continued to simulate an abscess in the liver, to such an extent that the abdomen was opened and explored twice, but with negative results. After remaining in the neighborhood of normal for several days the temperature again rose and the sublimate injections were resumed and continued for nearly a month. They seemed to be perfectly tolerated and progressive improvement followed, the patient leaving the hospital, July 6, apparently cured. His first symptoms had been noted in December, and he entered the hospital in March.

110. **Suprarenal Extract in Gastrointestinal Atony.**—Baccarani reports from Galvagni's clinic at Modena very favorable results from the use of Vassale's extract of the medullary substance of the suprarenal capsules in 14 cases of atony of the stomach. Experimental and clinical tests demonstrated its marked influence on the motor function of the stomach, perceptible even from the outside. The effects in the clinic also suggested that the active principle secreted in the medullary substance of the suprarenal gland raises the tone of the cardiovascular apparatus and the metabolism in general. The benefits derived also suggest that certain cases of gastrointestinal atony with general asthenia, headache, insomnia, etc., may be due to simple functional insufficiency of the suprarenal capsules, transient or relative.

111. **Hemostasis in Resection of Spleen.**—Girolamo calls his method intralienal suture; it has been thoroughly tested on dogs. A silk suture is passed through the sound part of the spleen from within outward, about one centimeter below the free margin of the organ and eight millimeters from the line of the projected incision. Another needle on the same thread is then passed in the same way from the concave surface outward, about one centimeter beyond the first needle. A third and a fourth needle on the same thread are then inserted in the same way. The entire margin of the parenchyma of the spleen is thus included in the threads, which are tied in loops, after being cut at the eye of each needle. A single needle and several threads can be used instead of the single one if wished.

112. **Paroxysmal Hemoglobinuria.**—The authors suggest as a hypothesis from the findings in Case 1 that the hemoglobinuria was due to loss of balance between the resistance of the red corpuscles and the toxic action of the serum. The balance may be upset by cold, congestion, trauma or other cause. The resulting hemolysis is followed by a defensive reaction on the part of the organism and an antihemotoxin is elaborated which arrests the hemotoxic process. The red corpuscles are thereafter more resistant than normal, as was observed in the blood of this patient. There was no hemoglobinemia after the attack was once established. The other case was one of hemoglobinuria without hemoglobinemia. The serum had merely slight agglutinating power and the hemoglobinuria was probably to be ascribed to some morbid condition of the kidneys as symptoms of nephritis were noted.

115. **Tonic Treatment of Epileptics.**—Alessi calls attention to the great benefit he has derived in a number of cases of epilepsy from general tonic treatment. He has found very useful a combination of sodium arseniate 1 mg.; zinc phosphite 5 mg.; calcium phosphate 8 cg.; sodium benzoate and pancreatin, each 20 cg. Twenty such doses are given in all, one to three a day before meals. The zinc phosphite is both tonic and sedative. Sabbatani has established that lime reduces the excitability of the cortex, and the pancreatin has a favorable influence on

digestive processes. Alessi supplements it with a little rhubarb. In conclusion he reports four cases in detail treated on this principle, showing the improvement in cases in which the morbid process has not already induced irreparable anatomic changes. He emphasizes in conclusion that the physician should aim to cure the epileptic, not the epilepsy; the greater includes the less.

Russky Vratch, St. Petersburg.

Last indexed XL, page 813.

121 (I, 42.) 1,100 Cataract Operations. Madame A. G. Arkhangelskoi (government medical officer in country district).—O 1,100 ezvletchenii katarakt.
122 Gangrena spontanea s. senilis. A. V. Beketoff. Ten cases; endarteris obliterans constant.
123 *Electric Wet Packs. P. Rutkovsky.—Obshtchie sogryevayushtchie elektritcheskie kompressy.
124 (No. 43.) Massage Treatment of Affections of Testicles and Adnexa. J. V. Zabludowsky.—K lyetcheniyu yaitchek, etc.
125 Preventive Plague Vaccination. A. M. Besredka.—O predokhranitelnya privivkakh pri tchumye.
126 Tetany in Children. 71 Cases with Autopsy in 6. R. A. Peters.—71 slutchai dyetskoi tetanii s 6 pat.-anat. ezslyedovaniyami.
127 O Chorion-Epithelioma. L. R. Krever. (Concluded.)
128 Personal Test of Transmission of Malaria by Anopheles. V. V. Favre.—Opyty zarazheniya bolotnoi likhoradkoi, etc.
129 Vaginal Ovariotomy. A. A. Anufrieff.—K voprosu ob udalenie kozhevikov yaitchnika tcherez vlagalishtche. (Commenced in No. 40.)
130 (No. 44.) *Late Recurrences of Cancer. V. N. Heynatz.—O pozdnikh vozvratakh raka.
131 Athletics at Universities. G. I. Turner.—Sport i physitcheskiya, etc.
132 Evolution of the Leucocytes. G. R. Rubinstein.—K voprosu evolutzii byelova krovyanova sharika.
133 *Connection Between the Female Genital Organs and Nasal Affections. B. A. Liboff.—O svyazi zabolyevanii zhenskikh polovykh organov s zabolyevaniyami nosa.
134 (No. 45.) Hernia processus vaginalis encystica. K. I. Susloff. (Commenced in No. 44.)
135 Polymorphism of Plague Bacillus. V. V. Favre.—O polimorphismye tchumnoi palotchki.
136 *Secreting Functions of Stomach Glands, Especially in the Insane. A. I. Yushtchenko.—O zheludotchnom pishtchevarenii, etc.
137 Distribution of Rabies Virus in the Organism. A. M. Tcherevkoff.—O raspredyelenii dlya vodoboyazni, etc.
138 (No. 46.) Relations Between Chorea and Athetosis. M. J. Breitmann.—O patogenezye Vittovoi plyaski i atetoza i o rodstvye mezhdu etimi 2-mya formami.
139 *Stud· [illegible] V. F. Orlovsky.—Novia danniya v [illegible] krovi.
140 (No. [illegible] rical Vertebræ. L. M. Pussep.—O traum. povrezhdeniyakh sheinoi tchasti pozvonotchnika.
141 Rat Disease Due to Acid-proof Bacilli. V. K. Stephansky.—Zabolyevaniya u krys, vyzvannya kislotoupornoi palotchkoi.

123. Electric Wet Packs in Nervous and Mental Diseases.—Rutkovsky has been advocating for some time local wet packs through which electricity is conducted, and now describes two cases in which the entire body was packed with these "electric compresses." Both were women, one a physician addicted to morphin, the other a case of neurasthenia, anemia, insomnia, etc. Marked benefit was derived in both. The patient is wrapped in a sheet wrung out of hot water, all but the head and one hand being thus covered. The cathode is applied to the feet and the anode, about 100 sq. cm. in size, is placed on the palm of the exposed hand. The current is turned on to the strength of 2 to 5 milliamperes for twenty to thirty minutes, reducing the strength whenever tingling is felt in the hand. The electric compress was applied twice at an interval of five days in the first case, and then several times later, and the patient said that she had never felt so well in her life; appetite and sleep have returned, and morphin has been abandoned. In the other case the neurasthenia inclined to melancholia with tendency to suicide, and the electric packs were supplemented by massage and suggestion. This treatment was successful after failure of all other measures during months of trial.

130. Late Recurrences of Cancer.—Heynatz has observed a number of cases in which cancer recurred after ablation more than three years previously. The late recurrences do not differ in any respect from those that appear in the first three years, and must be due to relics of the original tumor which have lain latent in the interim, even as long as twenty years in some instances. He, therefore, suggests that our acceptance of three years as the limit for a cure of cancer needs revision to conform to the clinical facts observed. In his own experience of 122 cases of recurrence, it was observed during the first year in 56; during the second in 46; during the third in 18, and after the third year in the same number. In one case, which he believes is unique, a recurrence the size of a pea was found in three months after ablation of, a cancer on the tongue, but the patient has been in perfect health during the eight years since the recurrence was removed. The point which he wishes to specially emphasize is that recurrence at any date should be treated by prompt excision, and that the second operation may completely eradicate the malignant disease. His percentage of late recurrences is larger than those of Labhardt's statistics, and a much larger proportion were operable.

133. Connection Between Affections of Female Genital Organs and the Nose.—Liboff's experience confirms that of other authors who have reported great benefit in certain gynecologic affections from cocainization of the genital points in the nose. The results were surprisingly effective in nervous dysmenorrhea, that is cases in which nothing pathologic could be discovered in the genital organs to explain the painful menstruation. The measure is especially beneficial in the case of young girls or unmarried women, and cocainization of other points besides those described by Fliess as the genital points, may prove similarly effectual. The explanation of these results is probably that many gynecologic affections are traceable to some neurosis.

136. Gastric Secretory Function, Especially in the Insane.—There is a natural secretion of gastric juice as food is being taken and is passing through the natural passages, and this factor in digestion is lacking when the subject is being fed through a stomach tube. Consequently articles for this form of feeding should be selected with a view to compensate this lack. Yushtchenko has found that milk, as a natural stimulant for the nervous and glandular apparatus, is the best of all foods for artificial feeding, especially for patients with little if any appetite. He has also found that besides milk, bouillon and the meat powder sold in Russia, all act as stimulants for the secretory gastric functions, and are, therefore, best suited for gavage of the insane. They may be effectively supplemented by eggs and the bread powder which is another Russian article. The use of these stimulating foods supplies the nervous and glandular apparatus with the stimulus naturally afforded by exercise and appetite.

139. Study of Alkalinity of Blood.—In tests on dogs, rabbits and in the clinic, Orlovsky found that the degree of leucocytosis had no influence on the alkalinity of the blood, even when a hyperleucocytosis up to 75 per cent. existed. On the other hand, he is convinced that the alkalinity of the blood, that is, of its plasma, is an important factor in the biologic life of the organism, and that the degree of alkalinity is dependent on the number of red corpuscles, as the alkaline elements are contained in the latter as well as in the plasma. The fluctuations in the number of reds in various pathologic processes in the individual as also in the same process in different individuals, amply explain the variations in the alkalinity of the blood.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE MICROSCOPICAL EXAMINATION OF FOODS AND DRUGS. A Practical Introduction to the Methods Adopted in the Microscopical Examination of Foods and Drugs, in the Entire, Crushed and Powdered States. By Henry George Greenish, F.I.C., F.L.S., Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain. With 168 Illustrations. Cloth. Pp. 316. Price, $3.50 net. Philadelphia: P. Blakiston's Son & Co. 1903.

BREWER'S SURGERY. A Text-Book of Surgery for Students and Practitioners. By George E. Brewer, A.M., M.D., Lecturer on Clinical Surgery at the College of Physicians and Surgeons (Medical Department of Columbia University), New York. With 280 Engravings and 7 Plates in Colors and Monochrome. Cloth. Pp. 712. Price, $4.00. Philadelphia and New York: Lea Brothers & Co. 1903.

STUDIES FROM INSTITUTE FOR MEDICAL RESEARCH. An Inquiry Into the Etiology and Pathology of Beri-beri. By Hamilton Wright, M.D. (McGill), Director of the Institute for Medical Research, Federated Malay States. Printed by Authority of the Resident General, F.M.S. Vol. II, No. 1. Paper. Pp. 93. Price, 3s net. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1902.

AN ENGLISH HANDBOOK OF THE PARIS MEDICAL SCHOOL. By A. A. Warden, M.D., Visiting Physician to the Hertford British

Hospital, Paris. With Prefatory Letters by Lord Lister and Prof. W. W. Keen. Paper. Pp. 72. Price, 2s. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1903.

A Course of Lectures on Medicine to Nurses. By Herbert E. Cuff, M.D., F.R.C.S., Medical Superintendent Northeastern Fever Hospital, Tottenham, London. Fourth Edition. Cloth. Pp. 270. Price, $1.25 net. Philadelphia: P. Blakiston's Son & Co. 1903.

Report of the Bureau of Vital Statistics of the State of New Jersey for the Year Ending Dec. 31, 1901. Pasteboard. Pp. 382. Trenton, N. J.: J. L. Murphy Publishing Company. 1903.

New Patents.

Patents of interest to physicians, granted July 7 and 14:

733120. Sanitary napkin holder. Frederick M. Baldwin, Winter Park, Fla.
733124. Hernial truss. Townsend Beckwith, Big Flats, N. Y.
733152. Empyema drainage device. Murdoch Chisholm, Halifax, Canada.
732732. Making lithophone and Glauber salt. William D. Gilman, Baltimore.
733026 and 733027. Inhaler. Sydney O. Goldan, New York.
732855. Pessary. Edgar M. Hewish, Philadelphia.
733049. Massage machine. Alva D. Jones, Louisville, Ky.
733228. Beverage dispenser. George A. Logan, Chicago.
732897. Apparatus for massaging. Graziano Sartori, Berlin, Germany.
732801. Machine for polishing atomizer tubes. Charles L. Turner, Winthrop, Mass.
732975 and 733358. Tachometer. Curtis H. Veeder, Hartford, Conn.
733364. Nebulizer. Robert L. Benson, Chicago.
733536. Case for clinical or other therometers. Frank J. Berberich, Jr., Brooklyn.
733899. Water bottle funnel neck. Robert D. Bradley, Canton, Ohio.
733472. Artificial limb. Erick H. Erickson, Minneapolis.
733398. Massage instrument. Benjamin E. Joseph, Chicago.
733402. Obstetrical forceps. Henry E. Koch, Hartington, Neb.
733729. Making cellulose esters. George W. Miles, Belmont, Mass.
733504. Medicated plaster. Frederic J. Nash, Brooklyn.
733879. Hernial truss. John B. Sheehan, Atchison, Kan.
733604. Apparatus for pasteurizing milk. Lee Sturges, Elmhurst, Ill.
733784. Massaging implement. Charles S. Whitney, Springfield, Ill.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended July 18:

Surgeon H. L. Law, retired, ordered to additional duty at Marine Recruiting Station, Providence, R. I.

Asst.-Surgeon H. L. Brown, appointed asst.-surgeon, with rank of lieutenant, junior grade, from June 29, 1903.

Asst.-Surgeon J. C. Thompson, detached from the *Columbia* and ordered home to wait orders.

Asst.-Surgeon C. H. DeLancy, detached from the Navy Yard, Norfolk, Va., and ordered to the *Columbia*.

A. A. Surgeon G. R. Plummer, ordered to Naval Station, Key West, Fla.

Surgeon C. H. T. Lowndes, detached from the Naval Station, San Juan, P. R., and ordered home to wait orders.

Surgeon G. Pickrell,, ordered to Naval Station, San Juan, Porto Rico.

Surgeon H. N. T. Harris, orders of July 8 modified; detached from *Glacier* and ordered to Navy Yard, Pensacola, Fla.

P. A. Surgeon W. H. Bucher, detached from Navy Yard, Pensacola, Fla., and ordered to Washington, D. C., July 21, for examination for promotion, and thence to San Francisco to take passage on S. S. *Siberia*, sailing August 8 for Asiatic Station, for duty at Navy Yard, Cavite, P. I.

Asst.-Surgeon J. C. Thompson, orders of July 14 modified; detached from *Columbia* and ordered to *Chesapeake*.

Asst.-Surgeon A. J. Geiger, detached from Naval Hospital, Navy Yard, Norfolk, Va., and ordered to Washington, D. C., for duty as recorder of naval and medical examining board now in session at Naval Museum of Hygiene and Medical School.

A. A. Surgeon R. B. Chapman, ordered to duty with Recruiting Party No. 6.

A. A. Surgeon L. H. Schwerin, detached from duty with Recruiting Party No. 6 and ordered to the *Southery*.

A. A. Surgeon F. W. Tyree, ordered to the Naval Station, Port Royal, S. C.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 16, 1903:

P. A. Surgeon J. C. Perry, granted leave of absence for one month from July 14.

P. A. Surgeon M. J. Rosenau, to proceed to Boston, Philadelphia, Marietta and Swiftwater, Pa.; Detroit, St. Louis, Milwaukee, Wis.; Chicago and Baltimore for special temporary duty.

P. A. Surgeon H. W. Wickes, granted leave of absence for one day, July 17.

P. A. Surgeon T. Clark, granted leave of absence for seven days from July 13, 1903, under paragraph 191 of the Regulations.

Asst.-Surgeon T. B. McClintic, to proceed to Atlantic City, Point Pleasant and Tuckerton, N. J., for the purpose of making physical examinations of keepers and surfmen of the Life-Saving Service.

Asst.-Surgeon F. E. Trotter, granted seven days' extension of leave of absence from July 13.

Asst.-Surgeon C. W. Wille, to proceed to Ocean City, Md.; Chincoteague Island and Onley, Va., to make physical examinations of keepers and surfmen of the Life-Saving Service.

A. A. Surgeon P. N. Barnesby, granted leave of absence for two weeks, on account of sickness, from July 2.

A. A. Surgeon W. R. Hicks, granted leave of absence for three days from July 14.

A. A. Surgeon C. B. Sweeting, granted leave of absence for thirty days, on account of sickness, from July 10.

A. A. Surgeon Jay Tuttle, department letter granting leave of absence for thirty days amended so as to be effective July 3.

A. A. Surgeon W. A. Weldon, granted leave of absence for fifteen days from July 11.

BOARDS CONVENED.

Board convened at the Marine Hospital, Port Townsend, Wash., July 17, 1903, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon J. H. Oakley, chairman; P. A. Surgeon M. H. Foster, recorder.

Board convened at the Marine Hospital, Chelsea, Mass., July 21, 1903, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon R. M. Woodward, chairman; Asst.-Surgeon W. C. Rucker, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 18, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, July 4-11, 2 cases.
California: San Francisco, June 28-July 5, 3 cases.
Georgia: Atlanta, July 1-8, 1 case.
Illinois: Chicago, July 4-11, 4 cases.
Indiana: Kokomo, July 4-11, 2 cases.
Louisiana: New Orleans, July 4-11, 2 cases.
Maine: Fort Kent and vicinity, July 10-14, 24 cases.
Massachusetts: Fall River, July 4-11, 15 cases; New Bedford, July 4-11, 2 cases; Taunton, July 4-11, 2 cases.
Michigan: Detroit, July 4-11, 11 cases; Port Huron, July 4-11, 3 cases.
New Jersey: Camden, July 4-11, 1 case.
New Hampshire: Manchester, July 4-11, 3 cases.
New York: New York, July 4-11, 1 case.
Ohio: Cincinnati, July 3-10, 2 cases; Cleveland, July 4-11, 1 case; East Liverpool, June 1-30, 6 cases; Hamilton, July 4-11, 4 cases, 2 deaths; Toledo, July 4-11, 2 cases.
Pennsylvania: McKeesport, July 4-11, 1 death; Philadelphia, July 4-11, 54 cases, 11 deaths; Pittsburg, July 4-11, 47 cases, 2 deaths.
South Carolina: Charleston, July 4-11, 4 cases.
Tennessee: Memphis, July 4-11, 2 cases; Nashville, July 4-11, 3 cases.
Utah: Salt Lake City, June 27-July 11, 8 cases, 1 case imported.
Wisconsin: Milwaukee, June 27-July 4, 6 cases.

SMALLPOX—FOREIGN.

Austria: Prague, June 13-20, 6 cases.
Belgium: Brussels, June 20-27, 5 deaths.
Brazil: Pernambuco, May 8-31, 11 cases.
Canary Islands: Las Palmas, June 13-27, 10 cases.
Colombia: Bocas del Toro, June 23-30, 8 cases, 1 death.
Ecuador: Guayaquil, June 20-27, 1 death.
France: Marseilles, May 1-June 30, 19 cases, 32 deaths; Rouen, May 1-31, 3 deaths.
Great Britain: Birmingham, June 20-27, 4 cases; Dublin, June 20-27, 9 cases, 2 deaths; Dundee, June 13-20, 2 cases; Leeds, June 27-July 4, 4 cases; Liverpool, to July 4, 28 cases, 4 deaths; Manchester, June 20-27, 10 cases; Newcastle-on-Tyne, June 13-27, 9 cases; Nottingham, June 20-27, 4 cases; Sheffield, June 13-20, 1 case; Southampton, June 13-20, 1 case from S. S. *Paul*, from New York.
India: Bombay, June 9-16, 27 deaths; Calcutta, June 6-13, 2 deaths.
Mexico: City of Mexico, June 14-27, 29 cases, 20 deaths.
Russia: St. Petersburg, June 20-27, 11 cases, 3 deaths; Warsaw, June 6-13, 2 cases.
Spain: Barcelona, June 13-20, 7 deaths.
Turkey: Constantinople, June 21-28, 1 death.

YELLOW FEVER.

Colombia: Panama, June 20-July 6, 6 cases, 2 deaths.
Costa Rica: Limon, June 24-July 2, 7 cases, 1 death.
Cuba: Havana, July 14, 1 death, patient taken from S. S. *Vigilancia* from Progreso.
Mexico: Progreso, June 21-July 5, 2 cases; Tampico, June 27-July 4, 28 cases.

PLAGUE—INSULAR.

Hawaii: Honolulu, July 3, 1 death.

PLAGUE—FOREIGN.

Australia: Queensland, Brisbane, May 9-30, 2 cases, 2 deaths; Bundaberg, May 16-23, 1 case, 1 death.
Western Australia: Freemantle, June 10, 1 case.
Egypt: Alexandria, June 6-13, 4 cases, 2 deaths; Beni Mazar, June 6-13, 2 cases; Port Said, June 6-13, 1 case, 1 death; Tukh, June 6-13, 8 cases, 2 deaths; Samalut, June 6-13, 2 cases, 2 deaths.
India: Bombay, June 9-16, 186 deaths; Calcutta, June 6-13, 15 deaths; Karachi, June 7-14, 15 cases, 13 deaths; Mauritius, June 4-11, 2 deaths.
Japan: Nagasaki, May 27, 1 death; Yokohama, June 6-13, 3 cases, 2 deaths.

CHOLERA.

India: Calcutta, June 9-16, 45 deaths; Madras, June 6-12, 1 case, 1 death.
Straits Settlements: Singapore, May 16-30, 20 deaths.

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Address.

THE ESSENTIAL PRINCIPLES OF INFANT FEEDING AND THE MODERN METHODS OF APPLYING THEM.*

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The question of infant feeding is a very broad one; too broad, in fact, to be covered in one evening, or in one address.

Although we usually consider that human beings are infants during the first two years of life, yet, so far as their feeding is concerned, it is the first twelve months of their existence in which the greatest difficulties arise in the proper adaptation of their food to their individual digestion, and to the requirements of their individual nutrition.

An address on infant feeding, therefore, should naturally be devoted to the feeding of the first twelve months of life. It has for many years been an accepted fact the world over that the mortality of infants who are fed on good human milk, obtained from their mothers or other healthy women, is lower than that achieved by any other method of feeding. It should, however, at once be insisted on that experience has also shown that it is good human breast milk, and good according to the modern sense of the word, which has produced these results. Poor milk from human beings, poor because they contain inadequate percentages of the various elements of the milk, such as the fat, sugar and proteids, or because of the improper combination of these elements, can, as it has often been proved, produce diseases, especially those which are connected closely with nutrition. The most common of these diseases are rhachitis, infantile atrophy, infantile scorbutus and the various gastro-enteric disturbances, which not only lead to malnutrition, but also render the infant vulnerable to specific diseases caused by specific organisms.

Since there are many causes and reasons through which the human infant may at any time, and in any place, be deprived of its natural food obtained from the human breast, it is evident that some other food must be substituted in order that the infant should live. It is well, therefore, when any food is to be substituted, excepting that which Nature has provided in the human breast, that we should speak of it as a substitute food. We should, however, admit that the great majority of cases of substitute feeding merely represents failures of breast feeding either because the mother will not or can not nurse her infant. Whatever the cause, the great majority of these failures of breast feeding could have been avoided and the infant fed on a substitute food successfully if the modern methods, representing the principles of percentage feeding, could have been early instituted and intelligently followed.

The substitute feeding of infants is not one of choice, but of necessity. The question, then, which must continually arise is: What materials and what methods have been found by the latest practical and scientific investigations to be best adapted to the infant when good breast milk can not be obtained?

Allowing that good human breast milk is the best food for infants in the first year of life, what I am about to say is directed to the subject of substitute feeding, a subject which must be met and dealt with as any other life-saving question.

In studying the methods of human breast feeding and the materials of which the human breast milk is composed, we have arrived at the following conclusions, which should be distinctly and concisely stated before taking up the question of the methods and materials for substitute feeding.

HUMAN BREAST MILK.

Human breast milk is practically sterile as it enters the infant's mouth, and is obtained by suction; it is either amphoteric or slightly alkaline in its reaction; it has a temperature of about 98 to 100 F. (36.7-37.7 C.) when it enters the infant's mouth. While it is recognized that various salts are present in solution in human milk, our modern investigations have not yet been carried so far as to obtain any practical clinical advantage in attempting to deal precisely with these salts when the milk of another mammal is used as a substitute for human milk. The three broad representatives of foodstuffs, the fats, the sugar and the proteids which occur in human milk, are the ones which we must practically deal with in making a substitute food. These three essential elements, forming the material to be used for the nutrition of the infant, do not always occur in the same percentages in the product of the mammary gland of healthy women. We must, therefore, accept the fact, which has now been established by the best chemists all over the world, that human breast milk is a food varying in its percentages, but that normally its percentages usually appear to be within certain limits. Thus, the food may safely vary from 3 to 4 per cent. in fat; the sugar, which is less varying than any of the other constituents of milk, may vary from 6 to 7 per cent., and the proteids from 1 to 2 per cent. This, however, does not mean that a somewhat higher percentage of fat than 4 must necessarily be unfit for the infant, nor that a decidedly higher percentage of the proteids than 2 must necessarily be undigestible, nor that the infant can not thrive on less than 3 per cent. of fat, or 6 per cent. of sugar. It does, however, show that human milk is a varying quantity, and that it is, therefore, not adapted to the digestion and nutrition of all infants, but that, on the contrary, a given percentage and combination of percentages may or may not be suited to the individual digestion and absorption of the infant. This explains why when one infant may be thriving on the milk of a healthy woman, this same milk from the same source may cause serious digestive disturbances in another infant.

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* An address delivered by request of the Ohio State Pediatric Society at Dayton, Ohio.

It is very evident that the successful feeding of infants, whether it be by means of human or substitute food, is essentially an adaption of special percentages of the different elements of the milk, and of special combinations of these percentages to the individual infant. We should also always bear in mind that in addition to the composition of the milk equal attention should be paid to the temperature, to the sterility of the food, to its freshness, and to the quantity at each feeding, adapted, according to the age and weight of the infant, to the size of its stomach. The question of the capacity of the infant's stomach must especially be taken into consideration, for experience has shown that, while it is very seldom that disturbances of digestion and nutrition arise from the infant being allowed to take as much of the milk from the human breast as it wishes, this same infant will take more from a bottle than its stomach can accommodate. In this way it may suffer from mechanical dilatation of the stomach, and from lessening of the elasticity of its walls, with a resulting interference with its functions.

The following table represents analyses of good human breast milk, made by our most competent chemist, Dr. Charles Harrington, of Harvard University. The table shows the varying percentages and combination of percentages which may arise in the milk of equally healthy women whose infants were thriving. They were all cases which occurred in my practice, and were, therefore, under my own observation.

TABLE ONE—HUMAN BREAST MILK ANALYSES (HARRINGTON).[1]

TABLE 1.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
Fat	5.16	4.88	4.84	4.37	4.11	3.82	3.80	3.76	3.30	3.16	2.96	2.36	2.09	2.02
Milk sugar	5.68	6.20	6.10	6.30	5.90	5.70	6.15	6.95	7.30	7.20	5.78	7.10	6.70	6.65
Proteids	4.14	3.71	4.17	3.27	3.71	1.08	3.53	2.04	3.07	1.65	1.91	2.20	1.38	2.12
Mineral matter	0.17	0.19	0.19	0.16	0.21	0.20	0.20	0.14	0.12	0.21	0.21	0.16	0.15	0.15
Total solids	15.15	14.98	15.30	14.10	13.93	10.80	13.68	12.89	13.79	12.22	10.77	11.82	10.32	10.84
Water	84.85	85.02	84.70	85.90	86.07	89.20	86.32	87.11	86.21	87.78	89.23	88.18	89.68	89.16
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Fat.—In regard to the composition of milk, it will be well to speak first of the quality of the fats which occur in the human milk. This fat consists chiefly of palmatin, stearin and olein, only about 2 per cent. of the total fat consisting of the glycerides of butyric, caproic, caprylic and myristic acids. The production of animal heat is so very important a part of the infant's wellbeing that it is not surprising that we should find so large a percentage of fat as 4 per cent. in the food which is provided for it, and it is very evident that this fat is put there not only for the purpose of nutrition, but also as a means of maintaining bodily heat. This latter function of the food can not with impunity be trifled with, for it is essential for the active metabolism, the importance of which we are forced to recognize when we are attempting to provide a substitute food. A proper amount of fat is also probably of great aid in the regulation of the fecal discharges, and for this purpose probably varies in the individual infant according to its individual idiosyncrasies. It is presumable also that the percentage of fat in the individual cases should be proportionate to the proteids, and this proportion is of great aid in the proper digestion of the proteids. We should, therefore, naturally expect that unless the standard percentage of fat, or at least a near approach to it, is present in the mother's milk, trouble will be likely to arise with her infant, and this has been my experience. I have found clinically that with the fat much lessened the nutrition suffered, the digestion was not good, and that there was a tendency to constipation, while when its percentage was decidedly above the standard the digestion was weak, there was a tendency to diarrhea, and in consequence a disturbance of nutrition.

These clinical observations at once suggest that in the management of infant feeding we must recognize the existence of two important conditions. One of these is the digestion of the infant, and the other is its nutrition. These two requirements are essential for a successful lactation. Milk may be easily digested but not nutritious, and it may be highly nutritious but difficult to digest, so that it is the equilibrium of these two conditions which produces a perfect infantile development. Although it is admitted that a large percentage of surplus fat is frequently found in the feces of infants whose digestion and nutrition are normal, and whose food is human milk, yet we have no more right to conclude from this that a smaller percentage of fat is sufficient for nutrition, or that a surplus eliminated by the feces is unnecessary, than we have to assume that there is too much oxygen in the blood because we find a certain surplus of oxygen in arterial blood which is returned to the lungs in the pulmonary veins. In fact, it is far more probable that Nature introduces a certain percentage of fat in human milk with a purpose which can be accomplished only by that percentage, so that it is an error to change this percentage beyond the variation which commonly occurs in average human milk, unless we find from direct clinical evidence in the special case that such a variation is demanded. There are, for example, many cases, especially in premature babies, and in babies with especially weak fat digestions in which greater variations than normally occur in human milk are called for, and for whom very low percentages of fat may be necessary.

Sugar.—The form of sugar which is found in human milk is called milk sugar, or lactose. It is more digestible than fat, but does not have so much potential energy, that is, so much heat-producing power in a given weight. The potential energy of the fat is to that of the sugar as 2.4 to 1. The conversion of sugar into lactic acid gives rise to many of the changes occurring in milk; for instance, the fermentation of the lactose with the production of lactic acid and the subsequent coagulation of the caseinogen by the lactic acid is one of the most common changes which milk undergoes. This process is the ordinary souring of milk. It is due to Hueppe's

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[1] Mothers healthy, and infants all digesting well and gaining in weight.

"bacillus of lactic acid," which seems always to be present. Over one hundred other kinds of bacteria appear to have this same property. The *Bacillus lactis aerogenes*, described by Escherich, is closely allied to Hueppe's bacillus, and also to the *Bacillus coli communis*, which has the same property of producing lactic acid fermentation. These bacilli are easily killed at a low temperature, and their growth is checked when lactic acid has been formed to the extent of 1 per cent. The formation of lactic acid by the *Bacillus lactis aerogenes* prevents fermentation in the stomach and intestines. The *Bacillus lactis aerogenes* is present in normal digestion, and acts on the milk sugar to produce an organic acid which drives out the more noxious forms of bacteria which by their presence interfere with normal digestion. This may be given as one of the chief among the many reasons why milk sugar should be used in milk modifications, instead of cane sugar, when we are preparing a substitute food.

Proteids.—The nitrogenous constituents of milk consist of two distinct elements, caseinogen and the proteids of whey; the latter consist chiefly of lactalbumin and lactoglobulin, and of these the former is greatly in excess. It has been found more convenient and practical to use the word whey-proteids as a general name to include lactalbumin, lactoglobulin and the nitrogenous extractives of whey. The caseinogen and whey-proteids make up approximately the total per cent. of the nitrogenous matter in both human and cow's milk, but their relative proportions to each other varies greatly in the two milks. Thus, according to König, as shown in Table 2, the caseinogen in human milk is represented by 0.59 per cent., while in cow's milk it is represented by 2.88 per cent.; the whey-proteids in human milk are 1.23, while in cow's milk they are only 0.53 per cent. Although these figures are not accepted by all chemists, there is undoubtedly a much greater proportion of the whey-proteids in human than in cow's milk, and a much greater proportion of caseinogen in cow's milk than in *human milk.*

Table 2.

	Woman's Milk.	Cow's Milk.
Caseinogen	0.59	2.88
Whey proteids	1.25	0.53
	1.82	3.41

Caseinogen is the part of milk which gives rise to curds; it is precipitated by acids by the rennin ferment, and by gastric juice. It is the most indigestible part of milk, and unquestionably its very large proportion in cow's milk is one of the principal reasons why cow's milk has given so much trouble in infant feeding, as compared with human milk. Whey, on the other hand, is the most digestible part of cow's milk, and its proteids remain in solution, and are not precipitated by either acids or rennin or gastric juice, but are readily converted into the albumoses and peptones, and so are easily absorbed. The whey-proteids are partially coagulable by temperatures above 161 F. (72 C.).

There is much about the proteids of milk which is still undetermined, but it is important to recognize these differences in the relative proportions of caseinogen and whey-proteids, and in their chemical properties, for we may now so modify cow's milk that by using whey as a diluent in place of water, we can make the whey-proteid element relatively greater than the caseinogen, and by so doing approach more closely the composition of human milk.

Assuming the necessity of a substitute feeding, we must first make a choice of the best materials to use in the making of a substitute food. If again the product of the human mammary gland in its composition is taken as a standard for a substitute food for the human infant, we must at once acknowledge that the milk of no other mammal approaches the human sufficiently close to permit of its being given in a purely undiluted form.

COMPARATIVE ANALYSES OF MAMMAL'S MILK.

The following figures, which show the comparative analyses of the milk of the goat, ass and cow, animals whose milk is most readily obtained for an infant's food all over the world, illustrate this statement.

Table 3.

Comparative analyses of goat's, ass' and cow's milk.

	Fat.	Sugar.	Proteids.	Mineral Matter.	Total Solids.
Goat (low in sugar and high in proteids)	4.3	4.0	4.6	0.6	13.5
Ass (low in fat)	1.6	6.1	2.2	0.5	10.4
Cow (low in sugar and high in proteids)	4.00	4.50	3.5	0.7	13.0

It is self-evident that if any of these milks are to be adapted to our standard they must be in some way modified, that is, their three principal constituents, the fat, the milk-sugar and the proteids must be changed in order to make them at all similar to the percentage composition of human milk.

It is important to remember that the simple dilution of milk with water, or the addition of lime-water or of sugar, is in fact a modification of milk. Modification of milk, therefore, in a substitute infant food is a *sine qua non*, and must be done in all cases except in those very rare exceptions in which the infant is able to digest undiluted milk.

As one milk has to be modified as well as another, and as none of the milks of the animals which I have just enumerated contains any inherent quality which would lead to its being used without some form of modification, physicians have found it most convenient to use the milk of the cow, and it is the milk of the cow which I shall consider to-night in speaking of the modification of milk. The important question in discussion should be, then, how far shall the modification of milk be carried out, and how scientifically and accurately can it be done?

BREEDS OF COWS.

Supposing that the cow is the animal from which we decide to feed the infant, a few words concerning the cow will be practical at this part of the discussion. It has been found that the percentages of the fat, sugar and proteids vary in the different breeds of cows. It is, therefore, necessary to know which breed of cows provide the most stable percentages in its milk, and is therefore the one best adapted for infant feeding. The higher grades of cattle have been found not to give the best milk for a substitute feeding. The fat in the milk of the cows originating from the Channel Islands, that is, the Jerseys and Guernseys, differs considerably from that of other breeds, and also from that of human milk, and it has been found from long clinical experience that the milk of these breeds is much less digestible than that from less highly bred cows, such as the Holstein and Ayrshire.

The breed of cow should then be chosen according to the quarter of the world in which we are feeding the infant, and, in making this choice, we should recognize that the percentages of the elements of the milk are not the same, not only in the different breeds, but in different herds of the same breed, and we should, in attempting to obtain precise percentages from these milks, understand that these differences exist, and that they must be taken into account in our calculations. It is also a fact that there is a marked difference in cow's milk at different seasons.

The following Table 4 shows the analyses of the milks of different breeds of cows:

TABLE 4.

	Durham or Shorthorn.	Devon.	Ayrshire.	Holstein.	Brown Swiss.	Jersey.	Common Native.	American Grade.
Fats	4.04	4.00	3.89	2.88	4.00	5.21	3.69	4.01
Sugar	4.34	4.32	4.41	4.33	4.30	4.52	4.35	4.36
Proteids	4.17	4.04	4.01	3.99	4.00	3.99	4.09	4.06
Mineral matter	0.73	0.76	0.73	0.74	0.76	0.71	0.73	0.74
Total solids	13.28	13.21	13.04	11.94	13.06	14.43	12.86	13.17
Water	86.72	86.79	86.96	88.06	86.94	85.57	84.14	86.83
Daily quantity	100.00 large	100.00 moderately large	100.00	100.00 very large	100.00 mod. large	100.00 mod. small	100.00 large	100.00 mod. large

It is to be noted that the percentage of fat in the herds of Holsteins on the Walker-Gordon farms average from 3 to 4 per cent., as contradistinguished from the average Holstein of 2.88, as shown in the table.

In comparing Jersey milk with other milks we find that human milk contains only a small proportion of the glycerids of the fatty acids, such as butyric, caproic and caprylic; also that the milk of the Holstein has a much larger proportion of the stable fats, such as olein, stearin and margarin, than does that of the Jersey, which contains a much larger proportion of volatile glycerids. These volatile glycerids do not exist in the mammæ, but are formed in the milk soon after milking, and this change takes place more quickly in some breeds than in others, and notably so in the milk of the Jerseys and Guernseys. In the emulsion of milk from Jersey cows the corpuscles are much larger than in the Holstein, while the Holstein emulsion when broken down is much more easily restored, that is, it emulsifies better and resists better a destruction of its emulsion, such as occurs when cream is produced, than do the milk of the Jerseys and Guernseys. The emulsion of the fat in the milk of the latter breeds is easily broken up, is more apt to produce oil drops on the top of the bottle, and when disturbed is not so easily restored. This latter fact is one of considerable importance when we are dealing with the rather difficult question of transporting modified milk.

ACTION OF HEAT.

A few words as to the action of heat on milk and its modifications will be of practical value to the physician when in writing a prescription for a food he has to determine either the degree of heat needed for the special transportation or for the gastro-enteric disturbance with which he is dealing: 1. Most pathogenic organisms are destroyed at from 140 F. (60 C.) to 147 F. (64 C.). 2. Certain spores are not destroyed by a single pasteurization. 3. All spores are destroyed in a heat of 248 F. (120 C.). 4. All germs are destroyed at 154 F. (68 C.). 5. The tubercle bacillus has lived in a heat of 149 F. (65 C.) with one hour's exposure. 6. Lactalbumin, the principal of the whey-proteids, begins to coagulate at 158 F. (70 C.). 7. The rennin enzyme is destroyed at 140 F. (60 C.). (The last two points are of practical importance when whey is used in a modification of milk.) 8. A temperature of 155 F. (68 C.) is the temperature now used for pasteurization, as it is sufficiently high to kill practically all pathogenic germs found in milk, without coagulating the lactalbumin, or producing any change which can be detected by taste or by the appearance of the milk. 9. If a modified milk which contains a high percentage of sugar and of lime-water higher than 10 per cent. is heated as high as 212 F. (100 C.) and sometimes even at lower temperatures, the mixture becomes brown, seemingly from the combined action of the heat, the milk-sugar, and the lime-water producing a caramel.

When milk is heated to 158 F. (70 C.) a certain amount of the lactalbumin and lactoglobulin is coagulated, but the major part of the lactalbumin is converted into a form which is precipitated by acids, magnesium sulphate, and by other precipitants of casein which do not act upon the lactalbumin in its natural state. At 177 F. (80 C.) certain organized principles undergo a change, the nature of which is not known, but the evidence of which is found in certain chemical reactions. At 212 F. (100 C.) calcium citrate is deposited, some oxidation of the sugar occurs, and a deposition of certain salts and albumin on the fat globules occurs, causing the latter to rise and coalesce. At temperatures exceeding 140 F. (60 C.) a skin is formed if the milk is exposed to the air, consisting probably of an oxidized product of casein, together with calcium salts and some fat. When heated above 158 F. (70 C.) the taste and smell of milk are altered.

COMPOSITIONS OF MILKS.

It will now be easily understood why if a modification of milk for a substitute feeding is necessary, it should be accurate, must be expressed in the percentages of the constituents of the milk, namely, the fat, sugar and proteids, and that the alkalinity and the temperature should be stated. In order to accomplish this, the matter is greatly simplified by thinking and speaking in percentages, and in order to obtain definite percentages we must, of course, know the composition of the materials used, and we must also devise methods by which we can calculate how much of these different materials must be used in order to get the different percentage combinations of the fat, sugar and proteids. The following table compares the elements of human and of cow's milk:

TABLE 5.

	Human Milk.	Cow's Milk.
Reaction	Slightly alkaline.	Slightly acid.
Specific gravities	1028 to 1034	1032
Water	87 to 88 per cent.	86 to 87 per cent.
Total solids	12 to 13	13 to 14
Fat	3 to 4	4.00
Milk sugar	6 to 7	4.50
Total proteids	1 to 2	3 50
Whey proteids	1 23	0 53
Caseinogen	0 59	2.88
Mineral matter	0.1 to 0.2	0.70

It can be easily seen by referring to the above table *that simple dilution with water will not make cow's milk* similar to human milk, for, although we may by such dilution reduce the proteids to the same percentage which occurs in human milk, yet at the same time we have so reduced the fat and the sugar that the food would in few cases prove to be nutritious. Moreover, if the total proteids in cow's milk are reduced by means of dilution until we obtain a proper percentage of caseinogen by so doing the whey-proteids will be diminished far below their relative proportion in human milk, since by referring to Table 5 it will be seen that the whey-proteids in cow's milk are already in much smaller proportion to the caseinogen than they are in human milk.

COMPOSITIONS OF CREAMS.

In like manner if we dilute different creams we shall find that the same objections hold for them as for the simple dilution of milk. For instance, an analysis of a 16 per cent. cream shows fat 16 per cent., sugar 4.05 per cent., proteid 3.20 per cent. In this case simple dilution with water sufficient to reduce the fat to 4 per cent. would reduce the sugar to 1.01 per cent., and the proteids to 0.80 per cent. It is therefore evident that still further modification must be carried out in order to raise the sugar and proteid percentages to make them equivalent to those of human milk.

It will now be understood that in order to obtain mixtures containing varying percentages of fat, sugar and proteids we shall have not only to dilute cream in order to obtain our fat percentage, but must add milk-sugar, either in a solution of definite percentage or in a dry form, in order to raise the sugar percentage, and some material such as fat-free milk, by which we can obtain the desired percentage of proteids.

Cream is evidently the most natural and practical material to use. It is also evident that the cream must have a definite percentage of fat in order that we should be able to calculate and obtain the percentage of fat desired in the mixture. Moreover, we must make use of creams of different strengths in order to make it possible to obtain certain combinations of proteids with a given percentage of fat.

The following Table 6 will illustrate the limitations in the percentage of proteids dependent on the use of creams of different strengths:

Table 6.

	Per cent. Fat.	Lowest possible proteids of.
10 per cent. cream gives with....	1	0.38
10 per cent. cream gives with....	2	0.67
10 per cent. cream gives with....	3	1.00
10 per cent. cream gives with....	4	1.34
12 per cent. cream gives with....	1	0.27
12 per cent. cream gives with....	2	0.54
12 per cent. cream gives with....	3	0.82
12 per cent. cream gives with....	4	1.08
16 per cent. cream gives with....	1	0.20
16 per cent. cream gives with....	2	0.40
16 per cent. cream gives with....	3	0.60
16 per cent. cream gives with....	4	0.80
20 per cent. cream gives with....	1	0.15
20 per cent. cream gives with....	2	0.31
20 per cent. cream gives with....	3	0.46
20 per cent. cream gives with....	4	0.62

You will thus appreciate that unless the physician knows not only the percentage of the fat in the cream which he uses, but also what limits of proteids he can obtain by the use of such a cream, he can not prescribe exactly the proteid percentage. He also must realize the risk which arises from not knowing whether he is dealing with an infant who may or may not be especially susceptible to variations in the percentages and combinations of the fat and the proteids in its food. Just as an exact and proper modification of milk may accomplish very favorable results, so an improper modification of milk may be unsafe for the patient, and in fact may lead to symptoms worse than indigestion, such as infantile atrophy, rhachitis and scorbutus.

VARIATIONS OF DIGESTION.

There is not much question, from my somewhat extended experience in the feeding of infants whose digestions are normal and also of those in whom it is abnormal, that infants show pronounced variations in their function of digestion. Although a number of normal infants may readily digest a combination of percentages which corresponds to the composition of average human milk, yet there is no doubt that many normal infants show decided idiosyncrasies of digestion, and that we, therefore, can not be satisfied in giving such infants a milk which simply duplicates the percentages of average human milk. We must, on the contrary, be prepared at any time to meet such idiosyncrasies, and when we take into consideration the variations in digestion which must necessarily occur under conditions corresponding to varied ages and abnormal digestions, there is no doubt logically but that methods for obtaining a great variety of percentages and combinations of percentages are essential for the successful feeding of large numbers of infants.

An instance which has come under my notice illustrates what I have just said. Let us suppose that you are called on to prepare a substitute food for a premature infant whose function of digestion is very weak and undeveloped. If to such an infant a substitute food corresponding in its percentage combination to good average human milk, that is, fat 4 per cent., sugar 7 per cent., proteid 1.40 per cent., is given (as happened in one case which I have recently seen), disastrous results might occur, and it did in the case just referred to. Convulsions and symptoms of serious indigestion appeared and the infant died. If, on the other hand, this infant had been fed with an accurately prepared food of fat 1.50 per cent., sugar 4 per cent., total proteid .50 per cent., or preferably by a split proteid calling for caseinogen 0.25 and whey-proteid 0.25 it might have lived. It has also been pretty well proved that infants throughout the early months of life, and often during the first year, seem to have an idiosyncrasy which either allows them to digest or prevents them from digesting a low or high percentage of one of the elements of milk as well as of two or three. While certain infants may digest and thrive on the average percentage of sugar and proteids, they may be unable to digest even a very low percentage of fat. In like manner they may have a weak sugar digestion, and, as is so often found, a weak proteid digestion. It has also seemed to me in my studies that certain infants have an idiosyncrasy which prevents them from digesting the average percentage of caseinogen; and in some cases we shall probably find that a similar idiosyncrasy exists in reference to the ability of an infant to digest the percentage of whey-proteids which would be easily tolerated by an average normal infant.

PATENT AND PROPRIETARY FOODS.

A word here will probably be useful in regard to the patent and proprietary foods. They are all pretty much of one class, and in most cases contain a considerable amount of starch. The analyses of these foods show that without exception some of the principal three elements, especially the fat or proteids, are so low in their percenttages that they must be modified in order to be nutritious. Without the addition of milk in some form they are undoubtedly not nutritious, and are practically useless. If, on the other hand, milk be added to them in order to make them nutritious, the question at once becomes one of the modification of milk, and in that case it is much more simple at once to modify good pure cow's milk. These foods, however, do much more harm than that which is connected with their lack of nutritious elements. One point is that they almost always contain some element which is not in human milk, such as starch, which in very young babies may seriously disturb digestion. Another harm that I refer to is that they encourage carelessness of the selection of the milk supply which is used in connection with them, in that the parents are led to believe that the chief virtue of the food lies in the food itself, and not in the milk which is added to it. Mothers and nurses are therefore very apt to use a poor milk supply, and are indifferent to the fundamental principles of scientific feeding, since they believe that the important point is the selection of some particular brand of patent or proprietary food. It would be just as sensible to attribute the entire success of an infant that is thriving on a substitute food to the milk-sugar which happens to be used in an ordinary modification.

If the physician wishes, for a definite purpose, or as he naturally would, during the tenth, eleventh and twelfth months of life to use starch in his substitute food, the starch should be presented in definite percentages. Thus cereal solutions can be added in place of the boiled water in any combination without altering the percentage of fats and proteids, and the percentage of starch thus added may be accurately determined if the percentage strength of the cereal solution is known. For instance, if fourteen ounces of a 1 per cent. solution of barley water is added in place of the boiled water, to a twenty-ounce mixture, the percentage of starch in the mixture is:

$$\frac{14 \text{ x } 1}{20} \text{ or } 0.70 \text{ starch.}$$

It is well here to state my views concerning the use of starch in any form in the early weeks and months of life. The amylolytic function of the infant is but very little developed at birth. It gradually increases as the infant grows older and has attained the stage of development by the tenth, eleventh or twelfth month which warrants its being used at that time for the conversion of starch into sugar. If it is used in the early months of life, we are taxing an undeveloped function, and we are liable to have results as deleterious to the infant's welfare as we should were we to tax the function of walking and standing at too early a period. It is quite as illogical and detrimental to the infant's welfare to tax an undeveloped function as it is not to make use of such function when the time for using it has arrived. Thus we should make use of the amylolytic function in the latter part of the first year, since at that time it is ready for use, just as we allow the child to stand at the same period.

The advantage which used to be claimed for the use of starch in a substitute infant's food was that it broke up the caseinogen in the milk, and thus made a finer coagulum, and one more similar to that which occurs in human milk. This action of the starch on the coagulum is, however, required in comparatively few cases, as we have learned to deal with the coagulum in a different way since we have instituted a method by which the caseinogen which forms the coagulum can be reduced to a very small percentage, while the whey-proteids, which are almost as nutritious as the caseinogen, can be used in quite a large percentage. By this method we can obtain a toal proteid percentage as high as 1.15 per cent., of which 0.90 per cent. is whey-proteids, and 0.25 per cent. is caseinogen.

The following Table 7 shows the combinations possible in these whey-cream mixtures, when prescribing from the milk laboratories:

Table 7.

Whey proteids, per cent.	Caseinogen, per cent.
0.25	0.25
0.50	0.25
0.75	0.25
0.90	0.25
0.90	0.50
0.75	0.50
0.90	0.60
0.90	0.75
0.90	1.00

Any percentage of sugar from 4 to 7 can be combined with these percentages.

If we thoroughly grasp the sense of what has just been said in connection with human breast milk, and the milk of animals, especially that of the cow, which seems to be the animal whose product is most adapted to substitute feeding, we shall at once see that the main question regarding substitute feeding is how to obtain the *best milk, how to treat it,* and *how to modify it* accurately. The importance of the milk supply is, however, great, and there is no doubt but that the breed of the cow, the care of the cow, of the stables and of the milkers on the farms especially used for the purpose of obtaining a proper milk supply for substitute feeding, is the keynote to success.

(To be continued.)

Original Articles.

ALBUMINURIA IN DIABETES MELLITUS.

ITS IMPORTANCE AS A FACTOR IN THE CAUSATION OF DIABETIC COMA.*

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Among the secondary tissue degenerations which result from diabetes none is so frequent as lesional changes in the kidneys. No extensive autopsy reports are at hand to establish the relative frequency of renal changes in diabetes, but such as are forthcoming demonstrate in a striking manner the association. Thus out of Griesinger's 64 autopsies, renal alterations were found in 32. In the main, the changes were degenerative in character, either fatty or hyperplasic. Seegen found such changes in 20 out of 30 cases brought to autopsy, and Dickinson in 25 out of 27. No special form of renal defect in diabetes can as yet be looked on as typical, the changes being variable in kind and degree, although almost always present. The form which they assume will depend on the duration and intensity of the irritation, to which the renal gland structure is subjected. As the toxemia differs very greatly in character and degree in the different forms—mild and severe—of diabetes, so we find the secondary changes in the kidneys differing widely in their essence and microscopic character.

The most interesting histologic feature of the diabetic kidney is the hyaline degeneration of the tubular epithelium first described by Armanni, and now generally known as the cellular necrosis of Ebstein. This condition of the tubular epithelium is encountered only in severe toxic forms of diabetes. Dreschfeld found these necrotic changes in 6 out of 10 cases of diabetic coma. Other renal alterations occasionally met with in severe forms of the disease are hypertrophy and the so-called lesion of Ehrlich, which, according to Frerichs and Ehrlich, consists in glycogen degeneration of Henle's loop and the straight tubes. All these renal changes may be ascribed to the action of toxic bodies of highly irritating character, such as acetone, diacetic and oxybutyric acids, etc., which are present in the blood and urine of such cases.

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In the mild long-continued form of diabetes the renal changes which develop are usually those of chronic nephritis. The development of chronic nephritis under these circumstances may be explained by prolonged hyperfunction, combined with persistent but low-grade irritation of the renal structure by the saccharin urine, which lead first to hyperemia, and if long enough continued, finally to inflammation of the parenchyma and overgrowth of the interstitial tissue. In this type of the disease the renal gland changes are nutritional and degenerative, whereas in the more rapidly progressive and toxic form of the malady they are inflammatory or necrotic. In the majority of cases presenting chronic organic processes in the kidneys the nephritis is probably of the mixed type, presenting both parenchymatous changes and interstitial hyperplasia. In aged diabetes arteriosclerotic renal atrophy is frequent.

Whatever form the renal alterations may assume, they sooner or later give rise to the presence of albumin in the urine. The frequent association of albuminuria with diabetes has received considerable attention, and much statistical evidence is available.

Pollatchek . .	found	albumin in	37	per	cent.	of cases.
Von Schmitz .	"	"	63 4	"	"	"
Lecorché.	"	"	50	"	"	"
Bouchardat	"	"	45	"	"	"
Von Noorden .	"	"	23 5	"	"	"
Grube .	"	"	40 4	"	"	"
Stokvis .	"	"	40	"	"	"
Bouchard	"	"	43	"	"	"
Von Dusch	"	"	28 5	"	"	"
Rokitansky. .	"	"	66	"	"	"

These statistics represent an average of 43.68 per cent in which albuminuria was present in diabetes.

Attempts have been made to classify the albuminuria of diabetes. Goudard distinguishes two nosologic varieties, which he names functional and lesional, the former associated with renal fatigue with phosphaturia or with organic disassimilation, whereas the lesional is produced by some form of renal lesion. Jacobson, on similar grounds, separates albuminuria of diabetes into benign and severe.

Grube divides diabetic albuminuria into five varieties, viz.: 1, terminal albuminuria associated with diabetic coma; 2, cardiac albuminuria met with in connection with myocardial weakness; 3, senile albuminuria of arteriosclerotic origin; 4, functional albuminuria due to irritation of kidneys by the saccharin urine; 5, albuminuria associated with organic renal changes. Salles recommends an equally complicated classification.

It seems to the writer unnecessary and confusing to adopt any elaborate classification for this condition. With the exception of the rare cases of albuminuria produced by circulatory failure in patients of asthenic type, the albuminuria of diabetes may, for general clinical purposes, be placed in one of two categories.

I. TOXIC ALBUMINURIA.

To the class known as toxic albuminuria belong the cases of the severe form of diabetes which are entering the terminal stage of the disease and in which the highly irritating acid toxins of endogenous formation have produced hyaline changes of the tubular epithelium—the so-called cellular necrosis of Ebstein, already referred to. This albuminuria is never absent in the stage of organic disassimilation and in diabetic coma, although it may fail to make its appearance until the terminal stage is entered on and toxinuria becomes established. This albuminuria is never of severe grade, seldom amounting to more than a mere trace, or at most, 1 to 1,000. It usually shows some increase just before death, and sooner or later becomes associated with large numbers of hyaline tube casts. After it makes its appearance, this form of albuminuria seldom disappears again completely. As a rule the albuminuria and glycosuria bear no direct relation to each other, and in occasional cases may even stand in inverse proportion to one another. It will usually be found, however, that a direct relationship exists between the toxinuria and the albuminuria, the latter increasing or diminishing with increase or dimunition of acetone and acid toxins in the urine.

This form of albuminuria constitutes what has been sometimes known as the acute albuminuria of McGuire. Universal clinical experience associates this form of albuminuria with the advent of coma, which gives it a grave prognostic significance.

II. DEGENERATIVE ALBUMINURIA.

The second class of albuminuria in diabetes includes the vast majority of cases of this condition, for notwithstanding the greater proportional frequency of the first variety to the class of cases in which it arises, the severe type of diabetes, these constitute but a small per cent. of the great bulk of diabetes. This form of albuminuria is also the product of renal irritation, but irritation of an entirely different nature and severity. In this class of cases the sugar in the urine is the offending agent. Its potency in this respect is much less than that possessed by the acid toxins of the severe grades of the disease, but its continuous action over long periods of time, combined with renal hyperfunction, which attends the associated polyuria, in the end inevitably initiate changes in the kidney which, in their full development, constitute nephritis. In proportion as the renal epithelium is affected, albumin appears in the urine, and as parenchymatous changes are usually a first result of the hyperemia following irritation, albuminuria is a pretty regular attendant on the renal change. In many cases for considerable periods this albuminuria is not attended by any very demonstrable evidence of nephritis, and consequently it has been misnamed functional, to distinguish it from albuminuria, associated with definite and clinically recognizable renal lesions. It has been considered a development of little importance and in the presence of conflicting therapeutic indications, as between the glycosuria and albuminuria, the latter is usually neglected. After a time, however, this at first apparently accidental albuminuria is found to merge imperceptibly into a true lesional albuminuria, with impaired renal function and secondary cardiovascular developments. Hyperfunction and persistent irritation have done their work, and a nephritis of a mixed type becomes established and adds to the difficulties of the case.

It will be seen from the foregoing brief considerations regarding albuminuria in diabetes that fully a third or more of all cases of the disease manifest this symptom at some time during their course. Although by no means of itself always a sign of established renal mischief, it is never devoid of importance. It may appear so frequently without accompanying disturbance that many writers falsely regard it as a harmless sign. As pointed out, it may occasionally arise as the apparent product of irritation of the kidneys by the saccharin urine, but should the glycosuria continue, definite renal and secondary systemic changes eventually result. In aged diabetes with arteriosclerosis albuminuria may be present from atrophic changes in the kidneys of sclerotic origin. In the late stages of diabetes, of whatever form, albumin may appear in the urine as the result of venous stasis from cardiac asthenia.

The conclusion forced on us by these considerations is that the development of this symptom is always a significant event, indicative in the mild, long-continued form of the disease of developing nephritis, and in the severe toxemic stages of diabetes we are warranted by experience in regarding it as one of the terminal developments.

A matter of great interest in connection with the albuminuria of diabetes is the frequency with which the glycosuria is observed to diminish as the albuminuria becomes more pronounced. In exceptional cases the glycosuria may even entirely disappear, thus constituting the substitutive albuminuria of Salles. Maragliano is skeptical of a true substitutive process, and explains the fact on the theory that albuminuria appears on improvement of the diabetes under treatment, because the polyuria lessens *pari passu* with diminution of the glycosuria and albumin already present but masked by the previous dilution of the urine is revealed. This view can not be seriously accepted as an explanation, because in most cases diminution of the glycosuria does not precede the advent of albuminuria, but follows it, and albuminuria is, moreover, not usually the result of treatment. A diminution in the glycosuria, even its entire disappearance, has been observed to occur as the apparent result of the hyponutrition of such complications, as pulmonary tuberculosis, etc., when they arise during the course of a diabetes. This can not be considered a similar process to that under consideration, for in the great majority of substitutive albuminurias the nutrition is not materially depressed. Naunyn's contention that this peculiar conduct of the glycosuria is analogous to the behavior of that symptom in the presence of cachexia and marasmus, from whatever cause they may arise in diabetes, is stoutly opposed by Kleen, who observes that he has repeatedly seen cases in which nephritis, though advanced, has left a fairly good state of health, with no marasmus or cachexia, but with marked diminution of glycosuria. Such cases are within the experience of most observers.

A number of very suggestive experimental observations are at hand which have some bearing on this question of the diminution of the glycosuria in the presence of albuminuria.

Achard has suggested that in carrying out the test for alimentary glycosuria we must not forget that the failure of sugar to appear after large amounts of glucose have been swallowed, may be due not solely to the vigor of the sugar-converting power as has been supposed, but wholly or partly to renal impermeability. In confirmation of this idea he reports a case of apoplexy with a small amount of sugar in the urine but a very large amount in the blood (5.1 grams per liter). This hyperglycemia he attributes to a lack of renal permeability, which was shown to be present in this case by the methylene blue test. McGuire declares himself inclined to ascribe the diminution of the glycosuria to inefficiency of the kidneys, and he suggests that the albuminuria and its accompanying renal changes may be concerned in the production of coma.

Schupfer observed in cases of combined albuminuria and glycosuria experimentally produced that more sugar was excreted by the kidney which eliminated the least amount of albumin, the excretion of urea corresponding to that of sugar. When the kidney lesion was one-sided, the injured kidney excreted albumin and much less sugar than the uninjured one.

Ellinger and Seelig demonstrated that dogs from which the excretion of sugar was constant, after injection of cantharides showed a diminution in the output of sugar, the excretion falling in one case from 7.6 to 2 per cent. At the same time they were able to establish that the sugar content of the blood was markedly increased. They think that their results prove that the kidney lesion caused by the cantharides led to a diminution in the glycosuria, while the glycemia still existed. Along the same line as the foregoing are the experiments of Richter, who, after previously damaging the kidneys, produced glycosuria by means of phloridzin and observed that the excretion of sugar almost constantly began later than in control animals, and did not reach so high a point.

In an attempt to solve the question of the existence of a renal form of diabetes Klemperer administered as much as 10 grams of phloridzin to each of ten subjects having granular kidneys, and there was no reaction in seven. That three of his patients developed glycosuria he thought might be due to portions of the kidneys having been still unaffected by the morbid process. Klemperer gave phloridzin by the mouth. Pugnat and Ravilliod administered phloridzin subcutaneously to twenty-one cases of renal disease, and in no case was the excretion of sugar normal in amount, and they conclude that with renal disease phloridzin glycosuria is either diminished in amount or entirely absent. In thirteen of the cases a marked diminution was observed, and in eight cases it failed entirely to appear. The experiments of Achard and Delamarre, performed in the same manner as the above, gave somewhat similar results. In five cases of interstitial nephritis four showed a marked hypoglycosuria, and in one case no glycosuria resulted. In four cases of acute tubal nephritis three showed hypoglycosuria, and in one case no glycosuria resulted. Of nine cases of chronic tubal nephritis five were hypoglycosuric, and four non-glycosuric.

From these collected observations the inference seems clearly justifiable that increased tolerance for carbohydrates and diminution of glycosuria in the presence of albuminuria is due to lesion of the kidney, which operates to cause diminished permeability of the renal secreting structure, not alone to sugar, but also to urea and other extractives, with accumulation of these bodies in the blood.

In the light of this deduction, an entirely new importance becomes attached to albuminuria and its associated renal changes in diabetes. The development of albuminuria in diabetes at once assumes a new and greater prognostic significance, especially in grave cases of the disease, where it may be of importance in the production of coma, by causing a heaping up of sugar and toxins in the blood. We have seen that there are constantly present in fatal cases of diabetic coma inflammatory and necrotic changes in the renal gland structure, comprising most frequently the epithelial necrosis of Ebstein, and less frequently hypertrophy with hyperemia and the degenerative lesion of Ehrlich. That these changes are not merely accidental is attested by the constancy of their occurrence, some form being almost invariably present. We have also seen that albuminuria invariably develops before the advent of coma. Grube, Williamson, Stokvis, Kleen and others regard its occurrence at this stage as constant, and their opinion is verified by practical experience. Personally, I have never seen coma develop without albumin being present in the urine, usually associated with casts. Kuelz first pointed out the frequent association of renal casts with diabetic coma, and they are now regarded as a sign of decided significance. We may regard the albuminuria and casts, under these circumstances, as the visible outward evidence of the renal gland changes. The results of experimentation already detailed point to the fact that the kidney lesions are inimical to the glycosuria, and frequently interfere completely with transudation of the sugar. Equal proof exists that urea, and presumably other organic extractives, suffer a diminution in the urine. It is a matter of common observation that immediately preceding the development of coma, a marked fall in renal efficiency takes place. Not only does the sugar diminish in quantity, but the quantity of urine, the urea and other urinary solids suffer a decided and material reduction. Dreschfeld has observed in two cases that at the outset of coma acetone and the ferric chlorid reaction entirely disappeared from the urine. No corroborative evidence is at hand regarding this interesting observation. Certain it is, however, that preceding coma we invariably have renal conditions established with albuminuria and casts, and with decided reduction in renal permeability. To the writer abundant proof exists in these associated renal changes and clinical developments for the belief that the kidney alterations are an invariable antecedent of diabetic coma, and frequently its determining factor, by causing a sudden and marked diminution in renal permeability and a heaping up in the blood of the diabetic toxins. This view of the etiology of diabetic coma does not substitute a uremic for a purely diabetic origin, for the coma is certainly not uremic, although uremia may be a secondary contributing factor. It is frequently observed in grave diabetes that acetone and diacetic acid may be present for long periods of time without the incidence of coma, and not until the evidence of renal alterations make their appearance, does the patient develop profound evidence of coma. Experimental evidence regarding the toxicity of these bodies demonstrates that acetone, diacetic and oxybutyric acids can not be said to be toxic in the ordinary sense of the words, and that all of them can be taken by a healthy person in comparatively large amount without ill effects. It is shown, however, that if they are introduced into the blood of animals in large enough quantities they will produce symptoms closely resembling those of diabetic coma, and that they possess the power of producing albuminuria. It has been observed that acetone, diacetic and oxybutyric acids occurring in certain other states than diabetes occasionally give rise to all the graver symptoms of the coma of diabetes. It can not be doubted that these toxins are the cause of coma in diabetes, but it is the renal impermeability produced as a result of the irritation of these bodies in the blood and urine which is the final determining factor, by so increasing the toxemia through accumulation of these bodies in the blood as to initiate the coma:

CONCLUSIONS.

The following conclusions seem warrantable in the light of the facts here collected:

1. Albuminuria is a frequent development during the progress of diabetes, over one-third of all cases manifesting this symptom at some time during their course.

2. Albuminuria in diabetes may, for clinical purposes, be divided into two varieties, toxic and degenerative.

3. Toxic albuminuria is generally of acute onset, arising during the later stages of the severe forms of the disease, as the result of irritation of the tubular epithelium, producing hyaline degeneration thereof, and due to the presence of acid toxins in the blood and urine.

4. Toxic albuminuria is an invariable precedent and accompaniment of coma, and may be regarded as of the gravest prognostic significance.

5. Toxic albuminuria with its associated renal changes, is the final determining cause of coma diabeticum, by producing a heaping up of sugar and toxins in the blood, *through diminished permeability of the renal* secreting structure.

6. Degenerative albuminuria occurs with great frequency during the progress of the mild type of the disease, and is of renal origin and produced by a gradually developing nephritis, which arises from prolonged hyperfunction and impairment of renal nutrition.

7. The appearance of albumin under these circumstances, while of little immediate significance, is of the greatest eventual importance, as indicating the intrusion of chronic nephritis into the already manifold clinical difficulties.

8. A few cases of albuminuria in diabetes may be produced by venous stasis due to cardiac asthenia, and under such circumstances will be associated with other evidence of heart failure.

9. Albuminuria in diabetes is never devoid of importance. It may be of the gravest significance, as we have seen, and is always of sufficient import to receive the earnest attention of the clinician.

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DISCUSSION.

Dr. William Krauss, Memphis, Tenn.—The percentage of cases of diabetes with albuminuria is perhaps greater than stated by the essayist, at least this has been my limited experience. I recall a case that no longer eliminated sugar on account of lost permeability, only albumin and casts. He had a horror of Bright's disease, and so I assured him that he was suffering from secondary nephritis, and under proper regimen he did fairly well. A student one unfortunate day told him nephritis and Bright's disease were *one and the same thing*. This depressed him so that he took to his bed and never recovered.

Dr. F. R. Weber, Milwaukee, Wis.—There is one point of great importance in this connection, the great influence of intercurrent febrile affections in cases of diabetes. Symptoms of intercurrent febrile affections, lasting three or four days, have a wonderful influence on these patients. I recall an instance occurring in a young girl of eight years, who had diabetes in childhood, which was not a typical case at all. One evening the child was stricken with tonsillitis and died within twenty-four hours. In this case a physiologic albuminuria rapidly developed into a pathologic albuminuria, coma appearing before death.

Dr. Arthur R. Elliott, Chicago—My purpose in presenting the paper was to draw attention to the importance of albuminuria in diabetes; the association of the two having never been regarded hithertofore as having any special prognostic significance. I believe albuminuria occurring in diabetes is never without significance. In acute cases it ought to be interpreted as a sign of approaching danger, and it should under all circumstances receive the earnest attention of the practitioner. The association of albuminuria with developing diabetic coma is too invariable to be mere coincidence. The conclusions of this communication, if they be correct, make the development of albuminuria one of the most important incidents of the diabetic state.

FRACTURE OF THE UPPER THIRD OF THE FEMUR SUCCESSFULLY TREATED WITH PLASTER OF PARIS WITHOUT EXTENSION.*

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NEW ORLEANS.

Fractures of the shaft of the femur are very common accidents, despite the strength of the bone. The lower end of the bone is more frequently broken than the upper. Fractures of the upper third are usually due to indirect violence, and of the lower third to direct injury. The course of the fracture is usually oblique. Marked angular, rotary and longitudinal displacements usually attend these fractures. The lower fragment is usually drawn to the inner side and behind the upper; this tendency to deformity is greatest when the fracture occurs in the upper third.

Every kind and variety of fracture is liable to occur to the femur. On account of the large muscular attachments to the bone, displacements are nearly always present in fractures of the femur, and this is especially true in relation to fractures of the upper third, when the bone is tilted forward by the action of the psoas, and abducted and turned out by the gluteus maximus and external rotators of the thigh, at the same time the lower end is drawn upward and to the inner side by the hamstring and adductor muscles. The weight of the foot assists these adductors in the eversion of the foot, which is a symptom of this fracture. The proper appliances for treatment of fracture of the femur has caused wide and varied discussions with many diversified views; there are perhaps more special apparatus invented and discarded for the treatment of these fractures of the femur than for any other bone of the body, but the one point of extension is agreed on by all.

Recumbent position, a suitable bed with foot elevated, a hair mattress, not too soft, and immobilized retention of the fragments are indispensable to success.

The nates are prevented from sinking into the mattress by placing boards between the mattress and springs of the bed. Extension is usually obtained by cord and weight applied to the leg over a pulley attached to the foot of the bed. The foot of the bed is often raised six inches and the extension weight increased up to ten pounds in order to overcome the muscular contraction so that the fragments can be brought down together.

Many surgeons have called attention to the difficulty in approximating the fractured ends, especially when they occur in the upper third of the femur, and in maintaining them in apposition after they have once been reduced. A casual glance through our different museums will prove that this is the seat of permanent deformities and usual shortening of the fractured limb, which has caused so many suits for damages and brought out so many cork-sole shoes and criticisms on surgeons.

Dr. Allis even considered this shortening and displacement so serious that he advised immediately cutting down on the fracture and wiring the bones together. In the case of a transverse fracture with lateral displacement and overlapping more than an ordinary extension apparatus to hold it in place is required. Direct lateral and anterior pressure is absolutely essential for the proper union and keeping in place of broken fragments. Under a general anesthetic, with the patient placed on a hard table and by making firm pressure on the upper fragment of the bone, while an assistant makes strong extension and counter-extension by pulling directly on the foot and body, the fragments can usually be approximated.

Owing to the mass of fleshy muscles which encompass the bone it is rather hard to say exactly when these fragments are in apposition. Good, all-around anterior lateral support for these fractured ends is best obtained by a plaster-of-paris dressing, after the bones have once been properly adjusted and swelling has abated. Owing to the thick muscular attachments of the bone, too much padding is not indicated at this point, provided the fracture is of the simple variety. The adipose tissue and muscles soon yield to the plaster dressing, which if at first seems rather tight, is soon loosened by the atrophy of the muscles and adipose tissue under rest and continued pressure, hence moderate support as can best be had by a plaster-of-paris dressing applied all around the limb, as a rule, gives better results than the long side splint, extension and sand bag and various other appliances in use. In the treatment of these cases the double inclined plane has been practically abandoned. Buck's extension by weight and pulley is still used by many surgeons. Dr. Hamilton's preference is for a long-sided splint extending from the foot to the axilla, much after the pattern of Liston's long extension splint. Valkman's sliding foot-rest is of great assistance in treatment of this fracture in many cases.

In a recent case of fracture of the upper third in a little boy 8 years old, with marked elevation of the upper fragment accompanied by eversion of the foot and drawing up of the lower fragment, I had a most successful result by the following simple method of one plaster-of-paris dressing which was not disturbed from the time of its application a few hours after the fracture until its removal four weeks after the accident, in which we found perfect union without any shortening. The little patient in pushing a swing that in its rebound came within six inches of the ground was caught under the swing-box seat, in which five or six other children were seated, the fracture being produced by direct violence, with some, though not very great, contusion of the soft parts.

The little patient was placed on a hard table with pelvic rest, the leg being held in extension; he was thoroughly relaxed with chloroform and the fracture reduced by extension, counter-extension and manipulation. While in this position a 2-inch Z. O. plaster was applied on both sides of the leg above the knee with a loop around the heel to provide for extension in the event of shortening; several roller bandages of padded cotton were applied around the limb thoroughly protecting the heels, condyles and trochanter and iliac spine; this batting was applied rather thin around the fleshy thigh proper, was extended around the pelvis, and up as high as the stomach, being thickly applied over the abdomen. With two assistants maintaining extension and counter-extension, plaster-of-paris bandages were applied from the ball of the great toe on around the fractured limb across the pelvis and up to the stomach. These bandages were interspersed with plaster-of-paris muck, not too wet, giving additional support between each layer.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

With the pelvic rest it was not hard to apply the dressing, so that it came well up in the groin, which had been previously padded, sufficient space being left posteriallv for the use of the bed-pan. We were careful to sufficiently pad the abdomen to accommodate gaseous extensions likely to occur after dinner, and were particular to carry the bandage up around the body as high as the stomach, so that the point of fracture was in reality at the middle of the plaster cast. In applying the first plaster bandage the upper end of the fragment was depressed by firm pressure, and, as said before, the bandages were reinforced by the additional plaster at the point of the break. When the plaster had set, we found that the length of the two limbs were exactly the same; which relative position remained until a cure had been accomplished, so that at no time was it necessary to add any weights to our adhesive straps which had been applied for extension in the event of any shortening.

The patient while confined to the recumbent position could move around on his hard mattress with comparative ease, the dressings did not become soiled from any source during the month's treatment, there were no bed or pressure sores in the case; only two or three casual visits were made during the treatment, and the result, as seen by the patient before you, was all that could be expected.

This case has been reported to show the extended use of plaster of paris in treatment of fractures of the femur, especially in children; its advantages are: its cheapness, the ease with which it is applied, its perfect adaptability to the shape of the limb, combining the good effects of an all-around splint, its cleanliness; it is a one-dressing treatment with nothing to get out of place, and the splendid results which follow its perfect application should commend it to surgeons in suitable cases in preference to the numerous complicated appliances recommended for the treatment of fracture of the femur, especially in children.

The second case brought before you is an engineer with fracture of the lower third, but treated with the plaster dressing without any extension, and, as you see, with no shortening, and with complete recovery within seven weeks' time.

I will show you another patient treated without any extension method. He was an engineer on the Illinois Central Railroad, and in a collision jumped from his engine into a pile of cross-ties, the result being a backward dislocation of the knee-joint and fracture of the lower third of the femur.

I dressed the wound in plaster of paris, as in the first case. We did not have quite enough padding on the first dressing, and we had to remove the bandage and put on a second plaster-of-paris dressing on account of the swelling.

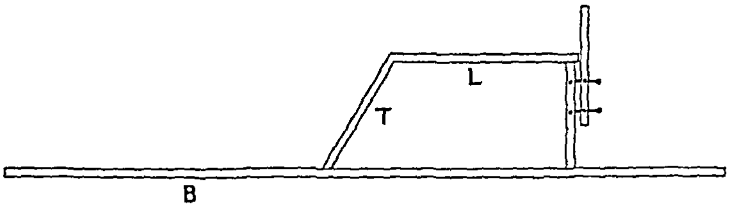
The ankylosis observed in the knee is not the result of the fracture, but is caused by the extreme backward dislocation of the joint. It has only been about seven weeks since the accident occurred, but there is not a particle of shortening, as you can observe by examination, and by the use of the tape measure. The halt in walking is a result of the dislocation, and not of the fracture. Considering the double damage of the fracture and the dislocation, the patient certainly was fortunate in the termination of this case, as he soon expects to be riding on his engine, doing his regular duties as engineer.

DISCUSSION.

DR. JOHN P. LORD, Omaha—I think the more expert we become in the use of plaster of paris the more constantly do we find an increasing field for it. While I am not prepared to say that all cases of fracture of the femur should be treated by plaster, yet I think you can perhaps treat the greater number of them in this way. Fractures just below the trochanters, for instance, I would not think of treating by the use of the plaster cast, because the extreme upward displacement of the proximal fragments would preclude the possibility of a good result in at least many of the cases. It has been my experience that the so-called intracapsular fractures are best treated by the plaster. Extension can also be used in addition to the plaster, if necessary, which I think is an excellent idea, and is too often neglected in the cases in which plaster is used. I think we can do with the plaster all that is required. I consider fracture of the femur in children comparatively easy to treat. I think this principle should govern our actions in the treatment of these cases. We should first reduce the fracture to as near a perfect position as possible, and then put on such a dressing as will maintain absolutely the proper position of the fragments, a dressing, indeed, that will continue to maintain this position of the fragments. The old-fashioned method of using sandbags and other splints relatively insecure, I think, at the best is poor practice. You can not depend on such things. We have all seen our preceptors adjust sandbags and rearrange the dressings every day. If there is anything that will encourage non-union it is that sort of thing. I think plaster does accomplish the result in a more definite and perfect manner than any other method.

DR. W. W. GRANT, Denver—The essayist referred to Dr Allis' declaration as to the difficulty of maintaining the apposition of the fragments and the necessity of cutting down and wiring the ends. In an article which he published several years ago, Lane of London stated that it was not so much muscular action that caused the displacement as it was the inflammatory conditions and blood about the ends of the fragments. In consequence of this Dr. Lane advised the cutting down and wiring the fragments—of course, under the most perfect aseptic conditions. I believe this practice often desirable in fractures of the elbow joint. However much truth there may be in his declaration that it is due chiefly to blood clot and to inflammatory conditions, we do know that the best results so far obtained have been by some form of extension with fixed apparatus around the limb. The old Buck method is today not improved on in the ordinary treatment of fractures of the shaft of the femur, coupled with the application of such splints as we may see fit to use. I would hesitate to use plaster immediately in most fractures of the femur. I believe it to be a better surgical procedure to wait until the inflammation has subsided. We know that swelling results immediately after the accident and after four or five days it has usually subsided. There will be no union during this time, and it is best to wait until the swelling has subsided before applying the plaster. It is particularly important during this time that you should see the condition of the limb every day. Legs have had to be amputated because of the failure or inability to see the patient often after the application of the plaster. Therefore, one loses nothing by delaying the application of the plaster cast for this length of time. I believe in these cases there is a better dressing than plaster—silicate of potash. It can be applied just as easily, but it does not dry so quickly, and will require several hours to harden perfectly. When the silicate of potash is dry it is very light and is just as efficient, and if you prefer the ambulatory treatment there is no comparison. It is so much lighter, cleaner, much neater and more easily and quickly removed.

Dr. John W. Brandau, Clarksville, Tenn.—The method which I will describe I have found very efficient in three cases of fracture of the femur in children. I exhibited a model of this splint two years ago before the State Medical Association of Tennessee. In the first place I make a board splint out of some light wood, about three-quarters of an inch thick, as wide as and a little longer than the patient's body, so as to give rest to the head and extend a little below the patient's foot with sound limb extended. The next thing is to make a thigh splint, which is firmly attached to the body splint at such an angle as will hold the fragments best in apposition, and on the side corresponding to injury. Then a leg splint running parallel to the body splint, with proximal end attached to thigh piece, with a support at the lower or distal end of the leg splint which rests on and is fastened to the body splint, thus forming an irregular arch. The splint should be made by measuring the sound leg and thigh and may be made longer or shorter, according to the amount of extension one wants to apply. The extension of thigh is also regulated by the padding one puts on the leg piece. If necessary, one can apply a foot splint adjusted so as to make extension on the leg, if that is also fractured, as per drawing below. The whole splint is then padded in order to make it as soft as possible for the patient's body and padding secured by roller bandages. The patient is then placed on the splint on his back, and the body firmly fastened to the base splint by a roller bandage in such a manner as to immobilize the trunk, which I think is important in the treatment of fractures of the femur in children. The entire limb is next secured to the splint by a roller bandage. In addition to this splint one should use short coaptation splints to the thigh anteriorly and laterally, so as to hold the fragments more securely in position. To secure these splints in position either a roller bandage, as above suggested, or adhesive strips may be used, and I find the latter convenient because they will not slip. The sound limb should be fixed to the body splint by strips which can be readily untied to allow the limb to be flexed in order to cleanse the child, etc. The splint can be easily made, nothing being required but a hatchet, nails, some light boards, cotton and bandages. The little child with this splint can be applied to the breast, carried out in the open air, and can be placed on either side in order to prevent hypostatic congestion of the lungs. I have had no trouble with the circulation in using this apparatus. The part on which the patient's buttocks rest may be covered by ruber cloth, or a fenestrum may be made in the cases of older children. The end of the apparatus on which the head rests should be kept a little more elevated than the foot, in order to prevent the dejecta from running back under the patient's body. The apparatus is very light when made of white pine or poplar wood.



B.—Body or base splint. T.—Thigh splint. L.—Leg splint.

Dr. J. W. Andrews, Mankato, Minn.—I don't think that anything has come before this convention of greater importance than this subject of the treatment of fractures, and it just occurred to me, as Dr. Grant was speaking, that if every surgeon would follow his plan and have less to do with the side splint and complicated apparatus, the results would be far better. It is not an easy matter to get good results in fractures of the femur. It is probably not very difficult to give the patient a fairly useful limb, but to get results without shortening and without deformity is not so easy to do. And while a quarter of a century ago a physician could very well be content with some shortening, a surgeon who gets much shortening to-day is not inculpable. I well remember hearing the late Moses Gunn of Chicago, after some one had read a paper before a meeting of the American Medical Association, in which he reported having gotten a perfect result; Dr. Gunn rose from his seat and said he wished to place himself on record as saying that no man could get a perfect result in fracture of the femur. That day is past, and at the present time, where we have a fairly useful limb, but there is some deformity, we do not consider that we have gotten a perfect result. As Dr. Grant has said, it is most important to keep the limb so that it can be seen for the first few days until the inflammation, if any, has subsided, during which time the old methods of extension can be applied, after which time the extension should be continued and the limb placed in plaster of paris. I believe that if that method is carried out, the results produced by it will be as good as can be produced by any other method of treatment. In reference to the objections made by Dr. Grant as to the weight of the cast and the untidiness of the plaster-of-paris dressing, little need be said for it is a small objection, and so far as having an apparatus that our patients can walk around with, or the ambulatory treatment, I do not believe that many surgeons care to have their patients with a fracture of the femur walk around much during the first three or four weeks at least.

Dr. J. D. Maury, New York—I was very much interested in the description given by Dr. Brandau of the splint which he applies in these cases, because it suggests to my mind the straight angle chair used by Sayre to relieve adult patients who have been in bed and are suffering from hypostatic pneumonia. In the City Hospital, New York, we simply used an old rocking chair, with a hole cut in the seat for the movement of the patient's bowels. The patient is then placed in it, being sure that the seat of the chair is longer than from the legs to the region of the lower back, and the patient is then arranged in such position as will give him comfort. Gravity is sufficient in these cases to give all the extension necessary. In regard to the plaster of paris, we have been using a modification of this method in New York, which seems much superior to the "glass" bandages. About a year ago I learned from a wall decorator that they used dextrin in making the cornices of the modern buildings and it occurred to me to incorporate some of this in the plaster of paris. We have used it in 10 per cent. strength by volume, simply mixing it dry and making bandages of crinoline in the usual manner. It is a very useful addition and in a measure does away with the weight of the plaster of paris. I found that it was not an original idea and that it had been used a good many years ago by Velpeau, but I learned that Dr. Weir and others in New York were not familiar with its use, and I thought probably the members of this section might not be. In the treatment of those forms of injury to the lower extremity in which the patient may be allowed to walk without crutches it is invaluable. It is also applicable for the making of spondylitis jackets. Put on the ordinary plaster of paris and then dry it. We have been drying it by one of those torches used by painters to clean off paint, we then put on about one thickness 10 per cent. dextrin crinoline bandages. This gives the plaster a yellowish hue and makes it as hard as adamant. It is not quite so porous as the plaster alone. At the Columbia Laboratory there are some experiments being made to determine the relative porosity of the two substances. Clinically we find that it does not make the cast hot enough to interfere with the comfort of the patient, and if such should be the case, fenestræ may be placed at such frequent intervals as to more than compensate for any such limitation. The cast, although very hard and tough, cuts very readily with a sharp pruning knife if the line of section be thoroughly wet with water.

Dr. D. W. Crouse, Waterloo, Iowa—I had a new experience the last year in a case of ununited fracture of the femur that had non-union after a varied treatment of three months. The fracture was close to the condyles and was comminuted. The patient was 18 years of age at the time of the accident and in vigorous health. The attending surgeon placed the leg in plaster cast from the first, for six weeks. When the cast was removed it was found to be ununited; a new fixed dressing was applied and the patient put on crutches and treatment continued for six weeks, with the patient walking about, with the same unsuccessful result. He was again placed in bed with pulley extension for six weeks more when he was brought to the hospital for the purpose of cutting down and wiring the ends together. The ends were found separated by muscular tissue and fascia a full inch. The ends of the bones were uneven and some pieces of bone loose from the shaft entirely—the ends of the bones were sawed off and approximated and wired. He did well for 10 days when he suddenly developed a hemorrhage and lost a large amount of blood before the case was under control, and in great danger of his life. A forced amputation was made in the middle third of the femur and transfusion of saline solution made at the same time and although nearly pulseless in the beginning, he was put to bed in rather a better condition than when the operation was commenced. Examination of limb amputated disclosed what was already known that the popliteal artery had beaten against the irregular crest of the fractured bone and had worn the coat of the artery through and nothing but amputation was left to be done. The lesson taught is that the posterior fragments should present no projection, the bone is to be lined with the posterior aspect of limb in adjusting a fracture near the condyles of the femur.

Dr. Luther Sexton, New Orleans—A liquid glass dressing is out of the question in a hot climate like this where it would soon become moistened by perspiration. I do not know how it would do in a cold climate, or how it might be with the dextrin, but I have never seen a liquid glass dressing applied to the fracture of the femur as a permanent dressing. The doctor's conception in regard to the patients walking around with fracture of the femur, I think, is remarkable and must apply to the convalescing period. We usually confine our patients in bed for at least one month, during which time we expect absolute quiet. After this walking and the upright position is encouraged. In regard to plaster fixation I claim that the mistake made in applying the dressing in many of these cases is that they do not carry the support up high enough. In these cases the plaster of paris was carried as high up as the stomach, the stomach, of course being well padded. We put on about as much plaster above the fracture point as we did below. I am not claiming that this is the proper dressing in all cases. I applied the Z.O. plaster in order to produce extension, if I need it. The little boy is as nimble as ever, and though the fracture was in the upper third of the bone there is no deformity or shortening. In the application of this plaster dressing, I believe it is absolutely necessary to have an assistant hold the fractured bones in position until the plaster-of-paris dressing is firmly applied. One of the points that I would like to emphasize is that you should have more of the plaster of paris above the fracture; do not have the dressing all below the fracture. In the case of the little boy, the point of fracture was actually in the middle of the plaster-of-paris cast. Now, in regard to the cast becoming soiled and not being hard enough, I have usually found it hard enough when it comes to take it off. If you wish to make it harder and render it so that it will not soil, you can paint it over with shellac. I have the cast preserved which was on the little boy, and the only soiling it got was from the money he put into it. He used it as a savings bank, for he got a dollar a day for keeping quiet, which was a great help in the treatment.

Aid to Catheterization.—Schroen found that he was able to introduce the catheter in a rebellious case in which an operation seemed the only resource, by connecting the catheter with a fountain syringe. Raising the bag so that the pressure was strong as the tip of the catheter reached the constriction, the force of the water distended the walls of the urethra and allowed the ready passage of the catheter, as he describes in the *Allg. Med. Ct.-Ztg.*, lxxi, p. 659.

SUBTROPICAL TRACHOMA,

WITH SPECIAL RELATION TO A NEW REMEDY IN ITS TREATMENT.*

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Discussion of the nature of trachoma with its relation to follicular conjunctivitis or gonorrheal ophthalmia does not lie within the limits of these remarks. Where great authorities differ so widely as to etiology facts yet unknown must be discovered before a consonance of opinion prevails. Trachoma, chiefly in its clinical aspect, occupies the substance of my paper.

Consideration of the disease is based on the following hypotheses:

1. Trachoma is a distinct disease, characterized by a granular and hypertrophic condition of the palpebral conjunctiva and its transition folds, usually with signs of ulceration.
2. It tends to progress in a fixed manner, varying only in degree.
3. Certain complications and sequelæ mark its course and termination.
4. Trachoma is contagious. It is a separate and distinct disease from follicular conjunctivitis.
5. It is capable of being beneficially modified, even cured, by appropriate early treatment.

After seeing the clinical aspect of trachoma in its strongholds abroad, observing its ravages and extent among the rural classes of northern and southern Germany; remarking its sinister results among the inhabitants of the metropolitan slums, such people as form the majority seeking aid in Vienna's great eye clinics, I then turn to a six years' experience in southern Alabama, and am forced to the conclusion that the type of the disease, in this latter locality, is milder in form, less frequent in the more serious complications and less disastrous in its final results than in the older countries.

Only in rare instances, chiefly among foreigners, among what might be called our Polish Jew contingent, have I seen cases of such severity as I formerly regarded as common types in European clinics.

Regarding the question of racial immunity, my evidence is entirely negative. I can only say that in spite of handling many colored patients I have never yet seen a case of true trachoma among negroes.

Some three weeks ago I saw a negro boy, aged 5 years, who exhibited extensive, exuberant granulations of both lids. Close inquiry elicited the fact that the lids had never entirely recovered from what had probably been an attack of ophthalmia neonatorum. This is the nearest approach to a suspicion of trachoma that has come under my observation in the negro race.

My colleague, Dr. William H. Sanders of Mobile, now state health officer of Alabama, tells me that in an experience of about thirty years he can not recall a single instance of a well-defined case of trachoma in a negro.

While considering our form of trachoma as less severe than in many other localities, no evidence is present to cause doubt of its ready contagion. Usually more than one member of a family is affected.

While in the northern and eastern cities much has already been accomplished to curtail the ravages of trachoma, I have yet to hear of a southern municipality whose boards of health have inaugurated any system of inspection at all adequate for its recognition, much less its exclusion from their public schools.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. J. A. Lippincott, Frank Allport and John E. Weeks.

The disease is becoming more prevalent. For, although my percentage of patients handled has not been appreciably greater, I have seen more cases of trachoma among school children within the past eight months than during the preceding two years.

In view of the fact that the laws of the United States recognize trachoma as a contagious disease, denying the right of admission to immigrants suffering from it; that health authorities of New York city exclude children suffering from trachoma from the public schools, it is quite time that all of our health boards should take cognizance of its existence in their midst, and should inaugurate the necessary steps to control its further spread.

The number of therapeutic agents whose proven efficiency in combating eye diseases renders their use almost universal, is infinitely limited. Twenty familiar names would fill the list ordinarily used by the ophthalmologist. New remedies, promising much, fulfilling but little, are constantly coming under notice.

We can be well satisfied if one in twenty, even one in fifty, of these new agents finds a useful, permanent place in our therapeutic armamentarium.

Before the final acceptance of a new remedy it must pass the critical judgment of more than one competent observer. It is well that physicians, from the nature of their studies and environment, possess in unusual degree the analytical or critical faculty. They are loathe to accept evidence save where it is substantiated by either a wide or their own experience. Thus a safeguard exists against the too ready acceptance of new remedies. But when a recently proposed drug or agent proves beneficial they are ready to receive it gladly, so that after a longer experience it assumes its proper sphere of usefulness, and receives the esteem of a trusted and valued friend.

Cocain was once an untried drug. Which of us could practice without it? Eucain more recently has been gladly welcomed. A sense of loss would follow were adrenalin eliminated from our list.

It is unnecessary to recapitulate the well-tried remedies that are universally recognized as aids in combating trachoma. Few of us probably do not place the salts of silver, copper and alum at the head of our list. Zinc and lead, even, with their derivatives, lend us frequent aid. Used correctly in proper proportion at the right time, they all have their places. But every one of them possesses certain defects, certain limitations.

In the selection of a remedy, particularly in private practice, something more than results must be regarded. It seems to me that chief among these is the active, willing co-operation of the patients and of their families. The treatment of trachoma is, at best, long and tedious. Few patients can, with convenience, visit the physician for daily applications. Home treatment is, as a rule, submitted to badly, unwillingly and irregularly; for the applications are painful and the patient naturally reluctant to apply them.

In the new remedy which I bring before your attention I do not claim a panacea for trachoma, not even that it is in every way superior to all of our other remedies. Nor do I claim originality in its use. But, so far as my knowledge goes, I am the first man in America to give it a trial. This belief is tenable because in July, 1902, Merck informed me that he would have to import it, and I did not receive it until nearly three months later. Having used it now for seven months, its results seem to justify placing it side by side with our best remedies.

I speak of copper citrate. The points claimed for it, if I can establish them, are worthy of attention.

1. It produces absorption and disappearance of granulations and hypertrophied papillæ quite as rapidly as other applications.

2. It produces less irritation in the lids; less pain and discomfort to the patient.

3. Important, and a corollary to its almost painlessness, patients will use it regularly in home-treatment. Even a nervous mother will apply it in the eyes of her spoiled darling. *What greater encomium can be pronounced on a treatment of trachoma!* For we all recognize the vital importance of systematic daily applications in the eradication of this treacherous disorder.

Now let me give proper credit to Dr. F. R. Von Arlt, the originator of the copper citrate treatment. He published a short paper on the subject in the *Centralblatt für Practische Augenheilkunde,* March, 1902. Of this paper I made an English abstract, which was published in the *Mobile Medical Journal,* June, 1902. Dr. Von Arlt uses by preference silver citrate, instead of silver nitrate in cases of ophthalmia neonatorum trachoma with secretion, and other allied conditions. He was led to the trial of copper citrate on account of the analogy between copper and silver salts. His description of the salt is as follows: "Copper citrate is a light, finely divided green powder, containing 35.2 per cent. of copper. It is sparingly soluble in either cool or hot water, about 1-9,143, slightly more soluble in 1 per cent. sodium chlorid solution, i. e., about 1-7,700. It was first prepared by Guy Lussac in 1832, and so far as the author knows, its therapeutic properties have never before been utilized. At first the powder was mixed with milk-sugar (1-20 to 1-10. Later used ointment form with, as a vehicle, the ointment of glycerin with starch. He has found it specially useful in trachomatous pannus and ophthalmia neonatorum. Profuse secretions, in all cases, must first be removed by silver citrate, silver nitrate or some other similar preparation commonly used for this purpose. Contraindications are afforded by corneal ulcers and by internal or external treatment with the iodin preparations." The following statement he places in italics. With it I thoroughly agree: *"It does not cure trachoma more quickly than other non-operative methods."*

I have used the copper citrate, chiefly in early uncomplicated cases of trachoma, in the form of an ointment, the strength varying from 3 per cent. to 10 per cent., with white vaselin as a base. The results have been excellent, as the following statement of cases will show.

Of course, the period of trial (seven months) is too short to admit of a final verdict as to its curative powers. Of the cases treated only nine have been discharged as cured, while six are still under treatment, progressing quite as favorably, and with far greater personal comfort than under former methods.

During the months of September and October, 1902, I began with five cases, early in November with three, late in November with one case. These cases were all in children ranging from 5 to 14 years of age. Eight of these cases were early, simple forms of trachoma, without serious complications. One was a severe case, complicated with pannus. The eight simple cases have been discharged for a period of from four to eight weeks. At present writing seven of these cases show no sign of remaining granulations, and no scarring. In one case where the granulations were extremely large and plentiful, expression with Knapp's roller forceps preceded the applications. Here some slight scarring is noticeable.

The case of pannus had been treated for six weeks before beginning with copper citrate ointment. The clearing of the cornea was more rapid after beginning its use. For more than three months now the opacities have almost disappeared, but a slight cloudiness remains, which will doubtless be permanent.

While the patients can open their eyes and bear the light, going about their usual duties or pleasures a few minutes after the ointment has been rubbed into the conjunctival sac, I have found that the best plan for home-treatment is to apply the remedy at bedtime, letting it remain in the eyes during the night. Only a few cases find this too irritating. The majority of patients will tolerate the application twice a day. An intercurrent coryza or febrile state necessitates the discontinuance of the ointment for a few days at least. While usually beginning with the 5 per cent. ointment, for I have practically abandoned the 3 per cent. strength, except in very nervous children where it is first necessary to obtain their confidence, I believe that the majority of patients will readily tolerate the 10 per cent. strength from the inception, just so soon as excessive secretion has been allayed by one of the silver salts.

I trust that those of you who take interest in the subject, who possess the facility of large clinical material, will ere our next meeting give copper citrate a trial in trachoma.

DISCUSSION.

Dr. James W. Dunn, Cairo, Ill.—After making the statement that I have seen two cases of genuine trachoma in what I considered to be pure blooded negroes, I would like to take up the subject of treatment of this disease. It is this that appeals to us most forcibly as practitioners, and is the feature on which we will all probably differ from the one who has just read the paper and on which you will likely differ from me.

The treatment may be divided into that used before the appearance of the granulations and that applied afterward. We can not diagnose this trouble with certainty, of course, before the granulations appear, but there is certainly an antegranulation period which lies between the beginning of the irritation produced by the cause of trachoma and the appearance of the granulations, during which we certainly have a chance to abort the disease by the application of germicidal remedies, as nitrate of silver, etc., else all of our theories that the disease depends on a germ are exploded. Indeed, I think it safe to say that all of us, many times in our practice, have aborted cases of trachoma in this stage when we simply suspected granular trouble, by the application of suitable solutions of strong germicidal agents.

After the appearance of the hyaline granulations there is nothing that remedies this morbid process with the facility and safety of the roller forceps. With this I am sure the profession generally will agree. However, I go a step further in saying that the advantage gained by the expression of the granules is not the only one. By the judicious use of this instrument we can so disturb the elements entering into the tissue organization causing the hypertrophy as to bring about the absorption of these elements themselves. It matters not whether we consider that the hypertrophy is due to the formation of new tissue from new cells, or to the conversion of one class of cells into another, certain it is that the hypertrophy and subsequent contraction can be removed and avoided in the proportion that we are able to bring about the absorption of the elements deposited in or under the conjunctiva. The roller forceps, firmly and steadily applied, can certainly assist very materially in this.

Then I may say further, that this is not the only good produced by the use of the roller forceps. In the old chronic cases their application is followed by an acute inflammatory reaction that has practically all the advantages of a jequirity inflammation without any of its disadvantages. So I almost always apply the roller forceps in trachoma. If it is an acute case, the application is made chiefly to express the contents of the hyaline granules; if it is a chronic case, the greatest desideratum may be the removal of the hypertrophy for which they are then used; but in most cases, however, both indications will obtain.

After the application of the forceps, it is not a question of choice of remedies. Any application that has a tendency to reduce inflammation will do good. Ichthargon, protargol, the milder boric acid, or the preparation the Doctor has mentioned in his paper will suffice. In conclusion, I desire to commend this method for those old chronic cases in which every kind of application seems to irritate and make matters worse—the very class of cases in which the profession at large is accustomed not to use it. The application, as I have said, is followed by an acute inflammatory process which results in less hypertrophy, and, consequently, much less contraction of tissue than would otherwise follow. So, to sum up, my method of treating trachoma is the roller forceps almost invariably, first, to express the contents of the hyaline granules and, second, to bring about absorption of the hypertrophy by producing an acute inflammatory reaction and by the mechanical disturbance of the elements undergoing the process of tissue formation in the hypertrophies.

Dr. Adolph O. Pfingst, Louisville—As to the clinical features of the case I would like to say a word about the differential diagnosis, because I think there is much obscurity in this respect. In my first observations of this disease cases were spoken of as trachoma which, according to my present ideas, were not trachoma at all. I got my first teachings in Berlin and in New York, and I believe now that the cases that were called trachoma in Berlin were not trachoma. To my mind the slight granular appearance and cell accumulation in the conjunctiva were not the follicles of true trachoma. I differ with the author as to its occurrence in Berlin. My experience was that there was very little trachoma there: mostly such cases as strayed in from Russia and Egypt. I was told there that the cases were rare and that there was doubt whether the proper diagnosis was always made. You have all seen cases where the entire lower fold of conjunctiva was filled with sago-like swellings and where the upper lid was not affected. I have seen cases of this kind called trachoma. The ready response of these cases to treatment is evidence that they are not trachoma. I have seen, with Dr. Ray, a case of true trachoma in a negro.

I congratulate the Doctor on his success with his new treatment. While the number of cases so treated is as yet small, the results are encouraging, as it is difficult to get patients to use these remedies at home which are usually employed in the treatment of trachoma. I believe that the greatest advantage of the essayist's treatment is the ease of its application.

Dr. Herbert Harlan, Baltimore—I had a very unique experience with a remedy that could not be applied in most cases. Three Russian immigrants were detained by the authorities because of the trachomatous condition of their eyes. On the second day after admission to the hospital two of them, children aged 3 and 5, broke out with measles and the disease had a most remarkable effect on the trachoma without any other treatment and in three or four weeks they were allowed to proceed to their homes. The father, however, who had had measles before, had to go through a long course of treatment. There is no doubt in my mind that the measles had a remarkable curative effect on the trachoma.

Dr. S. L. Ledbetter, Birmingham, Ala.—I see a great many cases of old cicatrization occurring as a result of trachoma that is evidently the same type we see elsewhere, but in the recent cases treated according to modern methods they get well without these bad results. The cases appear to be rarer than we are taught to believe, but I think that perhaps it is due to the treatment. I am of the opinion that trachoma is trachoma whether occurring in the North or South.

Dr. Ruffin Wright, Mobile, Ala.—I did not mean to speak of subtropical trachoma as a distinct disease, but only to imply that the type with us in the South was of a milder form than what is seen in other localities. Regarding its prevalence in Germany, in one village where I spent the night the landlord and his whole family had the disease, and they said they did not believe there was a family in the town that had not had it.

As to the matter of its treatment in the incubation period, it is difficult to prove what a case would have been if you aborted it. I do not think much of aborting remedies; it is like aborting a case of pneumonia or typhoid fever.

As to the expression of the granulations with the roller forceps, it is only occasionally necessary, always results in more or less scarring, and unless the granulations are very large we gain nothing except to hasten the healing process.

I do not claim that copper citrate brings about more rapid absorption than the old treatment where the latter is applied daily, but I claim that it is a remedy that the patient will apply daily. There are less than 10 per cent. of cases that will come for daily treatment, and therein lies the benefit of this method of treatment.

CONTROL OF SUPPURATION IN THE ANTERIOR SEGMENT OF THE EYE.

BY THE INSERTION OF IODOFORM INTO THE ANTERIOR CHAMBER.*

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In 1897 Ostwalt introduced a method of combating purulent inflammation of the anterior segment of the eye by inserting iodoform into the anterior chamber, and he also showed that when this was done on a normal eye it was not followed by any bad effects. The method has been occasionally referred to, but in the available literature only three allusions to it could be found. Ostwalt[1] again experimented with it in 1901 by placing rods of iodoform in the anterior chamber of a rabbit's eye, and "some time later" injecting a culture of staphylococcus or streptococcus. Purulent inflammation was prevented, but not having the original paper at hand, the facts as quoted from the abstract are vague to the point of uselessness. Romer[2] reports the use of it in three cases. In two cases of staphylococcus infection of the anterior chamber its use was followed by a cure of the condition, but in a case of cataract extraction infected by a "peculiar bacillus," it did no good. In five cases Goldzieher[3] controlled suppuration by this means, but again an abstract is my authority, and there are no details. In the hope of learning something definite of this method and its limitations, the experiments which I will recite were undertaken.

The almost uniform failure of our efforts to control the progress of infection after cataract extraction is well known, and it was particularly in the management of these cases that I hoped to get some help. As the infection in these cases comes, as a rule, from without, that is, from the conjunctiva, it seemed best to try to produce experimental infection in the same way. Repeated attempts to do this by making a corneal incision and rubbing over it a culture of staphylococcus, gave but one positive result out of a dozen attempts, and the method was then abandoned. Introduction of a portion of a culture of staphylococcus by means of a platinum wire loop passed through a corneal incision gave but little better results, and was discarded for the method of injecting into the anterior chamber with a syringe either a small particle of an agar culture, rubbed up with distilled water, or a few drops of a bouillon culture. It was astonishing to note the difficulty with which a successful inoculation was achieved. Staphylococci seemed to be hardly pyogenic in rabbits, so little reaction did they usually cause. In only two eyes did they produce sufficient reaction to be of use for the purpose of this study. Injections of streptococci were more successful, but by no means uniformly so.

The iodoform rods used in these experiments were made of gelatin containing 50 per cent. of iodoform. These substances are mixed hot and poured on a clean tin plate to harden. The resulting film is then cut into the required sizes. The procedures on the eyes were carried out under local anesthesia, and with the usual antiseptic precautions.

Experiment 1.—A single iodoform rod was introduced into the normal eye of a rabbit through a puncture in the cornea near the limbus. In two minutes the gelatin had dissolved and the liberated iodoform had settled to the lower part of the chamber. On the second day it was still to be seen surrounded by a bead of clear lymph. On the third day this exudation had lessened in size, but not till the fourth day was any absorption of the iodoform apparent. On the thirteenth day it had entirely disappeared. The pupil was active and the eye entirely normal.

Experiment 2.—A pure culture of streptococcus was injected into the anterior chamber of a rabbit. The next day a mild, plastic iritis was present, but this had subsided by the fourth day, when the injection was repeated. Four days later only a slight reaction with some exudation near the corneal wound having been produced, a third injection was made. A prompt reaction followed, iritis with abundant exudation and roughness of the cornea being noted on the second day after the third injection. The cornea regained its luster and then became covered by a vascular layer like a pannus, extending from the periphery toward the center. This did not appear until the sixth day after the successful inoculation, and took ten days to completely cover the cornea. The exudation in the anterior chamber finally almost filled the chamber, leaving a little clear portion in front and behind, but touching the cornea. While in this condition on the eighteenth day after the successful inoculation the animal was killed by rats and the eye destroyed. There was no conjunctival chemosis or swelling of the lids such as we see in panophthalmitis, though the rabbit lost flesh and seemed to suffer from systemic infection.

Experiment 3.—After two unsuccessful attempts to infect with a culture of staphylococcus a drop of a culture of *Streptococcus erysipelatis* was injected into the anterior chamber. In five hours iritis with exudation was noted. On the fourth day the exudate had collected to some extent in the lower angle of the anterior chamber (hypopyon), though the aqueous was never very clear. On the fifth day the pannus began to show at the corneal periphery. On the seventh day two iodoform rods were introduced into the anterior chamber through an incision near the limbus. These were invisible after 24 hours. No material change being noted in the eye, two more rods were introduced on the ninth day. The pannus continued to advance and the exudation in the anterior chamber to increase. On the nineteenth day the cornea was covered by the pannus and was bulging from the pressure of the exudation. On the twenty-first day the cornea sloughed, the slough separating on the twenty-second day, exposing a white, pasty mass in the anterior chamber, a culture of which showed streptococci in a state of division. The eye cicatrized and healed, a large scar occupying the site of the cornea. There was never the clinical picture of panophthalmitis as we see it in the human eye. The rabbit emaciated considerably and died. A culture of the blood made during life showed streptococci.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. J. A. Lippincott, Frank Allport and John E. Weeks.

[1] Zeitsch. f. Augenheilk., vi, 194. Abst. in Archives of Ophth., xxxi, 300.

[2] German Ophth. Soc., 1901. Arch. Ophth., xxxi, 44.

[3] Centralbl. f. Augenheilk., xxv, 71. Arch. Ophth., xxx, 685.

Experiment 4.—Inoculation by injecting a few drops of a culture of *Streptococcus pyogenes* into the anterior chamber. Iritis appeared on the second day, with cloudiness of the aqueous and the appearance on the fourth day of a mass of exudation in the anterior chamber near the wound of inoculation, together with a hypopyon in the lower angle of the chamber. On the fifth day the pannus before mentioned began to spread over the cornea, and on this day two iodoform rods were put into the anterior chamber. Tenth day, no change noted till to-day, when an additional yellowish mass of exudate was seen on the iris below the pupil, while above the pupil was a larger clear mass like the exudate seen in spongy iritis. The cornea and aqueous seemed clearer. Three more rods were put into the chamber. The next day (eleventh day) eight or ten small yellow nodules were seen on the iris, aqueous clearer. The vascularity on the cornea had advanced. On the thirteenth day, no further change being apparent, four more rods were put into the chamber; fifteenth day, no change except the pannus was much less dense. On the nineteenth day a decided clearing of the cornea had taken place, and the exudation was somewhat hour-glass shaped, with the smallest part in front of the pupil. Twenty-first day, cornea about clear, pupil occluded and the exudate was an oval yellowish body. Twenty-third day, except for a small central mass about as long as the diameter of the normal pupil, the anterior chamber was clear. Twenty-seventh day, the rabbit died. A section of the eye is shown. A culture of the blood on the twentieth day showed streptococci. There was emaciation and evidence of systemic infection.

Experiment 5.—Three injections of a culture of streptococcus were made before more than a slight irritation was produced. The reaction appeared on the third day after the successful inoculation, whereas it had, in other experiments, appeared on the first or second day. The reaction was marked on that day, with an abundant diffuse exudation into the chamber. Four iodoform rods were introduced. Fourth day, the exudation was thicker and settling as an hypopyon below and forming a mass above near the wound of inoculation. Put in two more rods. Fifth day, some of the iodoform put in on the preceding day was still visible. No change in the condition of the eye. Put in two more rods. Eighth day, the iodoform put in the eye on the fourth day was absorbed, but that put in on the fifth day was not entirely absorbed. The pannus had advanced but very little on the cornea and the exudation masses were decidedly less in quantity and less dense. Ninth day, the eye looked clearer, the exudation showing only as a slender oval mass in the center of the chamber. Tenth day, the mass of exudate was but one-half as large as on the preceding day. It was rounded and about the size of the normal pupil. The rabbit was killed by rats that night and the eyes destroyed. Systemic infection had apparently occurred from a previous experiment (No. 2), but for the last week of his life the animal was livelier, ate better and seemed likely to live.

Experiment 6.—Inoculation by means of a platinum loop with a culture of *Staphylococcus albus*. There was prompt reaction on the second day, with iritis and exudation into the anterior chamber, which soon collected into masses above and below the pupil. On the eighth day some of this exudation was removed with forceps through a peripheral corneal incision and an attempt made to wash out the chamber, without much success, owing to the thick, tenacious character of the exudation. This produced no change in the eye, and on the eleventh day two iodoform rods were introduced into the chamber. The pannus already referred to had appeared on the seventh day. The iodoform was not visible after 24 hours, and no change in the eye being noted, two more rods were put in on the fourteenth day. Nineteenth day, pannus covered the whole cornea, but had become less dense. No other change. Twenty-second day, cornea much clearer. The exudation in the chamber was a central mass the shape of the crystalline lens and about two-thirds as large. Twenty-fifth day, exudation mass had settled a little towards the lower angle and pressed against the cornea, which bulged slightly. Forty-fourth day, exudation still shrinking. Seventy-seventh day, the cornea was diffusely cloudy. The exudation had become a little smaller, being then about 2 mm. in diameter. A few vessels ran in the cornea from above to the spot where the exudate touched the cornea. No fundus reflex.

Experiment 7.—Injection of a culture of staphylococcus producing but slight reaction, it was repeated on the following day with a positive result on the second day after the second injection. Two rods put in the eye on the eighth day. Tenth day, the exudation masses were smaller. Twelfth day, put two more rods in the eye. Seventeenth day, pannus completely covered the eye. The exudation masses in the anterior chamber appeared to be changed into connective tissue. They changed color from yellow to white, and small radiating bands appeared around them. Thirty-eighth day, the cornea was diffusely opaque and on its posterior surface and in the chamber elsewhere were a few small, white masses. The pupil is occluded, but the rabbit sees and is fat and well.

SUMMARY OF RESULTS.

Iodoform used in three cases of streptococcus infection. One failure, two successes.

Iodoform used in two cases of staphylococcus infection. Two successes.

One case of streptococcus infection not treated. The animal was destroyed at a time when sloughing of the cornea appeared imminent.

In addition to these experimental cases, I wish to record one clinical case in this connection:

Case 1.—H. D., a negro man, 58 years old, but who looked at least ten years older, was seen in February, 1902. He had a double cataract, mature in both eyes. The left eye had failed first, in 1897, the right in 1901. There was a very marked arcus senilis in both eyes, and in the left additional rounded opacities in the cornea down and in and down and out from the center. The eyes were otherwise normal; urine normal. The operation of extraction with iridectomy was done on the left eye on February 13 in the ward of a general hospital. The corneal section lay in the arcus. The operation was normal in every way and healing was prompt.

February 21 the right eye was operated on in the same way. The only difference in the two operations was that in the last eye (right) there was more soft cortical substance brushed off the lens in its delivery. On the morning of the third day the wound was closed and a slight mucopurulent conjunctivitis was present, but as this had also appeared in the other eye after the operation and did no harm, no special thought was given it. At 5:30 that afternoon I went to the hospital and found that, it being Sunday, the nurse had two wards to look after and had been detained in the other ward. My patient had removed the dressings from the eye and had rolled over on the pillow with the eye underneath. There was an increase in the amount of secretion from the eye and the wound showed marked infiltration of its edges. Iodoform was dusted into the eye and the organ was directed to be bathed in an antiseptic solution frequently. The next morning the discharge was more profuse, the edges of the wound were quite yellow and the anterior chamber near the wound contained a yellow exudation. Aqueous very cloudy and whole cornea slightly hazy. A culture showed *Staphylococcus albus*. At 2 p. m. the wound was reopened and an attempt made to introduce some iodoform powder into the chamber, no rods being available. The manipulation was very difficult, and only after prolonged efforts was an appreciable amount of the powder gotten into the eye. It did no good whatever, and was not repeated. The cornea became infiltrated and sloughed, the eye subsequently undergoing atrophy, and was enucleated a few months later.

This case occurred before I had undertaken these experiments. I now know with how much more ease the iodoform can be handled in the shape of the rods, and also the necessity of its early and repeated use.

In regard to the technic of the introduction of these rods into the eye, it presents no difficulties at all. A peripheral incision in the cornea is made and the rod caught at one end with any fine forceps and pushed into the eye. It should enter the eye completely, leaving no part protruding. The gelatin softens very quickly on exposure to moisture, necessitating quick handling of it.

While the value of this procedure as a therapeutic measure does not seem to be brilliant, judging from the results of these experiments, we must not, in forming an opinion, lose sight of the almost hopeless nature of these cases under any other form of treatment. It appears to me to have a very distinct field of usefulness, and apparently has no possibilities for harm. To be of any value, it must be used early, probably on the first, certainly not later than the second day after infection, and should be repeated daily until positive improvement is manifest, or until its failure to control the condition is apparent. With small rods the dose should be three or four rods. It would be best to use at the same time such local antiseptic and general supporting measures as our experience has shown to possess some value.

DISCUSSION.

Dr. E. A. Shumway, Philadelphia—The subject of the treatment of infected wounds of the eyeballs is of very great importance, especially to those who live in manufacturing districts, where the number of accidents is large, and any method which will help us save such infected eyes and make the prognosis less grave should be welcomed as a step in advance in ophthalmic surgery. The use of iodoform within the eyeballs seems to have established itself firmly as a recognized mode of procedure. Ostwalt's experiments in 1897 showed that not only was iodoform well borne in the anterior chamber, but that it had a very decided action in checking the infectious process, especially when the lens was uninjured. Since then many favorable cases have been reported by Haab, Mayweg, Wüsterfeld and Goldzieher, from the introduction of the rods into the anterior chamber; and following the results of Ollendorff good results have been achieved by Schmidt, Wokenius, Haab and Römer by the use of the rods in the vitreous.

In this connection I would like to place on record two cases which were seen at the University Hospital in Philadelphia, this winter, in the service of Dr. Geo. E. de Schweinitz, to whose courtesy I am indebted for the privilege of reporting them.

Case 1.—J. B., aged 55, was sent to the hospital Oct. 10, 1902, for injury to the left eyeball, produced by a piece of flying metal, which struck the eye while he was working in a blacksmith shop, on the day previous. Examination showed a linear wound of the cornea, and commencing cataract. Under cocain anesthesia Sweet's magnet was applied to the eye, and almost immediately the lens was seen to bulge, and a piece of steel emerged from it into the anterior chamber. On enlarging the wound in the cornea, the foreign body was withdrawn from the eye without difficulty. Atropin was instilled, the eye bandaged and ice cold compresses were applied to the eye through the bandage. Calomel was given in doses of 1/6 gr. every hour. During the following night the pain was severe, and required hypodermics of morphia. Examination on the next day showed decided chemosis of the conjunctiva, injection of the eyeball, and bulging of the lens into the anterior chamber. The corneal wound was again opened, and following Randolph's advice, the opaque lens matter was evacuated, as far as possible, the chemotic conjunctiva freely incised, and the conjunctival sac dusted with powdered iodoform. On the following day (the fourth day after the accident) three sterilized iodoform rods were inserted by means of forceps into the anterior chamber. These rods were made by Shinn and Baer, local druggists, and measured 6 mm. in length, by 2 mm. by 1 mm. They were composed of 70 per cent. iodoform and 30 per cent. gelatin. The iced compresses were continued and atropin instilled regularly. The pain lessened at once after the evacuation of the lens, but three days later, as there was still considerable injection, two more rods were inserted. The eye then gradually quieted down, so that the man could be sent to his home October 28, eighteen days after admission, with a slightly flushed eye, which was beginning to shrink. He was seen at the hospital about four weeks later, and at this time the eye was commencing to assume a quadrate form, but was entirely quiet and caused no pain. With the strict injunction to report immediately to his doctor, if the fellow eye began to fail in any way, he was allowed to return home, with a sightless, somewhat shrunken eye.

Case 2.—B. B., aged 24, was struck in the right eye by a flying fragment of stone, which was chipped off by a chisel that he was using. The accident had occurred five days before, and in the interval he had been treated by his physician with iced compresses and instillations of atropin. The eye was decidedly injected, the cornea showed a yellowish infiltration of its lower one-half, and the anterior chamber was partly filled with a yellowish exudate. No details of the lens or iris could be made out. The magnet was applied to the eye, but no metallic foreign body could be detected. Iodoform was dusted into the conjunctival sac, atropin instilled and iced compresses were applied. As in Case 1, calomel was given every hour, and subsequently sodium salicylate, a dram daily, in divided doses. March 5, three days after admission, and eight days after the accident, there was still intense injection of the eyeball, infiltration of the cornea and anterior chamber with exudate, and bulging forward of the cataractous lens. The corneal wound was accordingly reopened at the clinic, the opaque lens matter and viscid exudate removed, so far as possible, and two rods of iodoform introduced into the anterior chamber. On the two succeeding nights the pain was very intense, necessitating the use of codeia and morphia, and the question of enucleation, or evisceration, was debated. But under the persistent use of iced compresses, atropin and salicylate of soda, the cyclitis gradually subsided. March 16, two weeks after admission, the inflammatory exudate had been absorbed except in the pupillary area slight cyclitis was still present, but there was no pain. The infectious process had been checked, and the patient was discharged eight days later, March 24. Since then he has been under observation at the clinic. The eyeball shows a decided flattening of its anterior portion, and a slight remaining ciliary flush. Vision is zero.

In other words, we had two badly infected wounds of the anterior part of the eyeball, in which the lens was injured, which, according to Ostwalt's experiments, is always a serious complication, as the swollen cortex seems to act as a good culture medium for the growth of the infectious organisms, in which the infectious process was checked, and the eye gradually quieted. The patients, workmen, were able to retain the eyeballs, which, although somewhat distorted and sightless, were painless, free from danger to the fellow eye, and better for them than a glass eye. It is, of course, difficult to say how much credit should be given to the iodoform, and we are too prone to ascribe all good results to some new method of treatment, but so many favorable reports have been made that I think we are justified in giving the method further trial.

Of the other methods which have been tried, subconjunctival injections of various drugs have proved of little value, experimentally at least. On the other hand, the use of intraocular galvano-cauterization, introduced by von Millingen in 1899, has, by virtue of the success reported by von Millingen, Roscher, Baumler and Zentmayer, established its claim of being of very great service in checking the infection by destroying the organisms in the lips of the wounds and along the back of the infiltrating process, and as there is no reason to prevent the use of both methods in the same patient, it seems to me we would secure the best results by cauterizing the wound and the infiltrated areas by means of the actual cautery, and then introducing the iodoform. The best way of introducing the iodoform is by means of the rods. It is almost impossible to prevent the powdered drug from being washed out of the anterior chamber, as the instrument used for this purpose is withdrawn. Pure compressed rods of iodoform would be best, but it is apparently impossible to make them without the use of some agglutinating material. It is of great importance, also, to evacuate the opaque lens cortex if the lens is injured, and vigorous internal medication should not be neglected. Salicylate of sodium has proved of great value in large doses, and the recent remarkable results of Schirmer, who was able to show 60 per cent. of recoveries in cases of uveitis fibrinosa and 65 per cent. for uveitis purulenta by means of large doses of mercury, prove the remarkable efficacy of this line of treatment.

Dr. Frank Allport, Chicago—I have found considerable difficulty in securing the discs or rods. Professor Haab left me a bottle of them, which I have used, and I have been unable to have them properly made. I tried the Parke, Davis people and one or two other houses, but the results were always unsatisfactory. I am glad to have heard Dr. Shumway's discussion of this subject and his method of using the iodoform and gelatin.

Another difficulty that I have had is how to make these rods aseptic. As I understand it iodoform in itself is not necessarily aseptic and I have endeavored to render the discs and rods so in various ways, but have not been very successful, because the efforts to sterilize them has always resulted in making them difficult to handle. For instance, if you attempt to sterilize them in the sterilizer by means of heat, or more certainly if by steam, they become so limp that you can not handle them. So I have simply used them as I got them out of the bottle and have not noticed any ill effects; in fact, I have used them a number of times and have obtained very good results. Whether it was really due to the iodoform or not I could not say. In the cases where the iodoform discs seemed applicable I also, as a matter of precaution, followed the teachings of Dr. Gifford in giving heavy doses of salicylate of sodium, 1 gr. to every pound of weight, and I have had good results in the treatment of the cases where the iodoform seemed applicable, but as I say, whether due to the use of the iodoform or the salicylate of soda, or other treatment, I can not say. At all events my results have been good. I use the iodoform discs as a routine practice where I extract steel from the eye with the Haab magnet, which is the one I always use, whether there seems to be indication for it or not. After removing the steel I insert one of the iodoform discs and put the patient on heavy doses of salicylate of soda, and while I, of course, do not always get useful eyes (I sometimes get atrophied ones), I seldom have panophthalmitis, and I am inclined to attribute it to the iodoform or the salicylate of soda. I believe the iodoform to be a good method of treatment, but I have not confined myself altogether to the use of the discs; I have also used an emulsion of iodoform, injecting it by means of the Pannus syringe, and I think I have secured as good results with it as with the discs.

Dr. G. E. de Schweinitz, Philadelphia—The iodoform rods referred to by Dr. Shumway were made by Mr. Baer, a pharmacist of distinction in Philadelphia. Sterilization of the iodoform may be secured by washing the drug in a solution of bichlorid of mercury and subsequently drying it, but it does not make a great deal of difference when used in a highly infected eye whether the iodoform is sterilized in this or other manner.

My experience is too limited to give an opinion as to the value of this treatment, but I would like to emphasize Dr. Shumway's remarks as to the intense pain that was produced the night following their introduction. Whether this was due to some fault in my technic, or in the manufacture of the rods, I do not know, but the pain was certainly severe. The eyeballs thus treated gave evidence of approaching panophthalmitis. This dreaded result was averted; one resulting in partial phthisis bulbi, and the other in an adherent leucoma. Both patients were highly content at not having to submit to an enucleation.

Dr. J. H. Claiborne, Jr., New York—I take it that the purpose of these experiments was to combat any inflammation that might result after cataract extraction, or injury to the anterior part of the eye. In this connection I would like to make a preliminary report on some experiments which Dr. E. B. Coburn and myself have been conducting.

Following the recent instance, with which we are all familiar, of a gynecologic patient suffering with severe streptococcic infection, being treated with formalin, we made some experiments on the eyeballs of rabbits infected with streptococci. We injected a pure culture into the posterior chamber and conducted three experiments. In the first rabbit we injected, subsequently to the infection, formalin 1 to 5,000 into the vitreous humor; in the second the same solution into the capsule of Tenon; in the third no injection. The rabbit not treated recovered from the infection we had given it. The one injected in the capsule of Tenon recovered, while the one with injection in the vitreous chamber went straight to destruction. We then passed the streptococci through another growth, it being a well-known fact that the second growth is much more virulent than the first. All the eyes subsequently injected went straight to destruction. One thing proved was this, that streptococci can sometimes be introduced into the eye permanently without any bad effect, which fact accounts for the independent recovery of some of the infected cases we see.

In order that our experiments might be in the line of infections following operations, we took an infected rusty nail and thrust it into the anterior chamber and ciliary body. These cases all went to destruction at once. We then tried injections of formalin 1 to 500, but with no effect.

These experiments, it seems to me, are most commendable because if there is one bugbear for ophthalmologists it is the secondary inflammations following cataract extractions. I never perform a cataract extraction that I do not have cold chills for a day or two following. So, if any light can be thrown on the subject it is to be commended. The results shown in these reports are not very brilliant, but they are in the line of investigation. I think that some other agent should be tried, and would suggest the use of formalin 1 to 500, or 250, as soon as the symptoms of suppuration commence.

Dr. Albert B. Hale, Chicago—One remark was made that I do not like to see go unchallenged; that is, that it would be well to combine the use of the galvano-cautery with the insertion of the iodoform rods. The idea in using the rods is to preserve the eyeball, while the result of the cautery is destruction absolutely. We know how completely it destroys tissue and what a scar results. If we use the cautery we destroy a large part of the area which we want to heal normally. If we can get success with the rods the cornea is normal and clear.

I am not quite convinced myself of the good results obtained when vision is nothing. It is only a surgical experiment that has resulted with surgical success, but leaves the patient no better off, and time would have been gained by enucleating the eyeball at once. Of course it may go on for some years without causing trouble, but I am in favor of removing the ball when it is of no use to the individual.

Dr. E. C. Ellett, Memphis—The rods I made use of were 50 per cent. iodoform in gelatin. That strength, of course, was arbitrary; I had no special reason for making them that way, but it makes an easy rod to handle. The attempts at sterilization were by heat. The mixture of iodoform and gelatin was heated to a sufficient degree to sterilize, and then poured out on sterile tin plates, and when cool cut and the rods made. These were put into sterile containers and used without further preparation.

CONDITION OF THE ENDOMETRIUM IN CASES OF UTERINE MYOMATA.*

THOMAS S. CULLEN, M.B.

BALTIMORE.

CERVIX.

As a rule the cervical mucosa shows no change. Occasionally, however, cervical polypi are present or the cervical glands may be moderately or markedly dilated. In rare instances true cervical erosion, in other words an ulceration of the cervix, exists, and now and then squamous-cell carcinoma or adenocarcinoma of the cervix may be associated with myomata. Where the cervix is much lengthened out the glands are often unraveled. We then note the squamous epithelium of the cervix alternating with that of the unfolded glands.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. L. Hektoen, F. B. Wynn and W. S. Hall.

BODY.

Endometritis is occasionally found; when present it is almost invariably associated with inflammatory changes in the adnexa.

Tuberculosis is not uncommon, but while sometimes occurring independently, is usually associated with similar processes in the fallopian tubes.

Finger-like or dome-like projections from the mucosa have been seen from time to time, and also other pictures more or less suggestive of a malignant change.

Adenocarcinoma of the body of the uterus is quite frequently associated with myomata, as we have noted elsewhere. In the majority of cases it was not suspected.

While any of the foregoing conditions may exist, yet in nearly all instances the changes present are entirely mechanical. If myomata are subperitoneal or intraligamentary, the mucosa is usually normal, provided the tubes are unaltered. When a nodule impinges on the cavity the mucosa over the most prominent part becomes stretched and thinned out. This progresses until eventually there is nothing but the surface epithelium covering the nodule. While this atrophy is increasing the mucosa in the depressions at the sides remains unaltered or becomes thicker. This thickening is occasionally due to simple gland hypertrophy. Portions of the mucosa are often mechanically forced out into the cavity, producing polypi. With the distortion of the mucosa the glands sometimes become blocked, producing small cystic dilatations. The glands of the mucosa are sometimes much dilated, and not infrequently there is considerable edema. When the myoma becomes entirely submucous it is usually covered by a thin layer of mucosa, but in a few instances we have seen a sloughing cavity in the myoma opening directly into the uterine cavity. Now and then a submucous myoma from the posterior wall will blend with the similar nodule in the anterior wall, obliterating the mucosa entirely over a given area.

From an examination of a great many specimens we can lay down the general rule that where the fallopian tubes are normal and where no sloughing submucous myoma is present, that the uterine mucosa will be perfectly normal or show simple mechanical changes. The import to the surgeon is that where such favorable conditions are present he can do a myomectomy, opening, if necessary, a large part of the uterine cavity with little danger of infection. On the other hand, if the tubes be adherent, or a sloughing submucous myoma be present, complete removal of the uterus is indicated, the sloughing submucous nodule, of course, being removed some time prior to performing the hysterectomy.

These results are based on the gross or histologic examination of nearly one thousand cases.

Properties of Hydrogen Peroxid.—A good make of hydrogen dioxid is an efficient disinfectant and the best deodorant known. It will even banish the odor of putrid standing urine. It also arrests parenchymatous hemorrahge, and its efficacy in cleaning out wounds and loosening adherent dressings is bringing it more and more into use. It bleaches hairs, banishes freckles and is the only effective antidote known for hydrocyanic acid. It is also an excellent cleansing material for instruments, checking bacterial development.—*Allg. Med. Ct.-Ztg.*, lxxii, p. 195.

THE ILL-HEALTH OF RICHARD WAGNER.

GEORGE M. GOULD, M.D.
PHILADELPHIA.

(*Concluded from p. 297.*)

By no means is he out of the wood with his nerves, for he has to send apologies through Uhlig to another correspondent next day for not answering at once: "That sort of letter always takes a deal out of me." Not a word about the poem; nor in that to Liszt on the morrow, October 13.

"Nothing further to-day. Used up as I am, it would only be lame. . . . Your old tormentor, Richard Wagner." On the 14th, just three days after the "forced pause" has been made in his poem, the migraine seems to have renewed its attack: "I wanted to work, but felt so ill that I had to pass the whole forenoon on the divan, half asleep, half awake. There'll have to be an alteration in me."

That I have been unable to work to-day has terribly depressed me! How I should have liked a couple of days' outing—but the weather is too vile—regular 2d December!"

So Rheingold is half finished, apparently by October 10. That half has taken something like four weeks to versify, or as long as the whole of die Walküre last June, owing to its author's wretched health compelling him to work in snippets. And it must have been followed by another acute relapse, since not a line stands written to any of his correspondents between the 14th of October and the end of that month. November 1 we again hear of the poem at last, in terms that suggest its having been resumed about a week previously: "You'll get but a half a dozen lines to-day, dear friend (U.). After some interruption (through being unwell) I have arrived at devoting all my power of application exclusively to the completion of 'Rheingold,' and shall not stop myself to write long letters before I'm through with it. That, however, will be during the course of this week, at the end of which I therefore promise you a proper letter." November, 1852, began with Monday; by the 3d or 4th, then, "Das Rheingold" was finished as to its verses; for Uhlig is told on the 10th, "The middle of last week I completed my work, very much exhausted." Scarcely more than ten days can this second half of Rheingold have taken him, so that he must have doubled his "little hour" of late. As a matter of fact, the next letter to Uhlig will satisfy our minutest curiosity even on that point: "The postman comes at 11 every morning; I usually work from 9 o'clock until that hour, and therefore am already somewhat tired and in need of rest when my letters arrive. This places me in the alternative of either not answering at all or doing it as briefly as possible. If I put it off it's precisely the same next day, unless I stop my work entirely for one morning as happens when I mean to write a longish letter. From noon till bedtime I never write another line, except in the most pressing emergency."

When the poems of "Young Siegfried" and the "Walküre" were finished we found their author giving vent to the utmost joy; there is nothing of the kind to celebrate the consummation of the Rheingold poem. Partly due to the fateful lesson of the work itself, the greater share of this lack of elation must be assigned to the same cause that had impeded the poem's progress: excessive nerve fatigue. The letter that announces the event to Uhlig—and a very long letter it is, as a rest is being taken—for the most part consists of reflection on death and diet: "Let us be reasonable, dear friend, and recognize in utmost calm that every one of us bears within himself the genetic seeds of his own death, and that the only question is how to stave off that specific death as long as possible. With myself, e. g., everything tends to death through nerve consumption. . . . So long as I still have an object in life I wish to keep death from my throat, and for that reason adopt all feasible expedients to preserve myself. I purposely avoid all over-exertion, step out of the way of all over-excitement as much as possible, try to regulate my feeding and digestion, and aim above all at the utmost comfort, repose, agreeable impressions—so far as I can. I'm assured by many that I still may jog along awhile if I strictly observe this diet, and analogies are making it credible even to myself. . . . Simple foodstuffs are not for such as you and me; we need the complex substances that offer the utmost nourishment with the smallest demand on the power of digestion. Our rule should be to eat often, little and good, at the same time to avoid all great exertion, even in bodily movements, but be careful for comfort and agreeable rest." It is the valetudinarian's gospel: but, when the invalid happens to have such an "object in life" before him as the composition of a "Ring des Nibelungen," it becomes his absolute duty to take care of himself for sake of the world.

The announcement of the previous day to Liszt (November 9) is more plainly despondent in tone, shadowed as it is by the failure of the Berlin scheme for Tannhäuser, the history of which precedes it in this letter. "With myself things are going from bad to worse each day: 'tis an indescribably good-for-nothing life I'm living! Of actual enjoyment of life I know absolutely nothing; to me the 'pleasure of life, of love' is purely a matter of imagination, not of experience. So my heart has had to pass into my brain, and my life to become a mere artificial one: only as 'artist' can I still live; into the artist has my whole 'man' been resolved.

"If I take account of my wretched state now normal to me, I can not but deem my nerves ruined; strange to say, however, these nerves do me the most wonderful service when put to it when sufficiently fine incentives come to me: then I have a clearness of vision, a sense of pleasure in perceiving and creating such as I never knew before. Ought I to call my nerves ruined then? I can not. Only, I see that—in the way *my* nature has developed—its normal state is exaltation, whereas the ordinary calm is abnormal to it."[2] 1852.

The same complaint of nerve fatigue that formed a running accompaniment to the Rheingold poem ushers in the revision of the two Siegfrieds: "I must stop; my head's getting bad." November, 1852.

Uninterrupted work has again strongly affected me, and the nerves of my brain are so overwrought that even these few lines put me in a state of violent excitement, wherefore I must ask you not to be angry if I make them very short. June, 1852.

I feel that I am still capable of doing good things, but only by keeping very strict diet, and especially by frequently interrupting my work and entirely diverting my thoughts before going on again. *Do.*

The "Valkyrie," the poem of which I finished on July 1, I wrote in four weeks; if I had spent eight weeks over it I should now feel better. In future I must adopt this course. *Do.*

Unfortunately, I can not reply to your letter as I should like to do; the nerves of my brain are once more in a state of great suffering, and for some time I ought to give up all reading and writing, I might say, all mental existence. Even the shortest letter wearies me terribly. . . . I only wish to explain to you why it is that to-day I must limit my communication to stating briefly what is absolutely necessary. . . . The work has been a perfect torture to me. This eternal communication by letter and print is terrible to me. September, 1852.

My nerves are not in the best condition, but I have begun *again to* work at my poem for an hour or so every day. October, 1852.

I am going from bad to worse every day, and lead an indescribably worthless life. . . . Perhaps you will soon be rid of me. November, 1852.

My terrible melancholy. January, 1853.

In case I should die during the work. February, 1853.

How long I shall endure this terrible joylessness I can not tell. About the middle of last month I was on the point of succumbing, and thought that I should soon have to follow my poor Uhlig. I was persuaded to call in a doctor, and he, a careful, considerate and conscientious *man*, takes much trouble with me. He visits me nearly every other day, and I can not but approve of his treatment. *Certain it is* that if I do not recover it will not be his fault. . . . For me there is no salvation but *death*. Would that it found me in a storm at sea, not on a sick bed. February 11, 1853.

I can only live in extremes—*great* activity and excitement and—most perfect calm. March 4, 1853.

My nights are mostly sleepless. March, 1853.

Whether the cure has been of any use to me the future must show, but on the whole I am not inclined to repeat it. At St. Moritz, July, 1853.

The foolish man wants to hear something from me about his book, but as soon as I bend my head a little towards theory the nerves of my brain begin to ache violently and I feel quite ill. *Do.*

Truly writing is a misery, and men of our sort should not write at all. Aug. 7, 1853.

I am in a miserable condition, and have great difficulty in persuading myself that it must go on like this, and that would it not really be more moral to put an end to this disgraceful kind of life. . . . To cure my sick brain the doctor has prevailed on me to give up taking snuff altogether; for the last six days I have not taken a single pinch, which only he can appreciate who is himself as passionate a snuff-taker as I was. Only now I begin to perceive that snuff was the solitary real enjoyment that I had *occasionally*, and now I give that up, too. August, 1853.

I am back again in Zurich, unwell, low-spirited, ready to die. . . . At Genoa I became ill, etc. September, 1853.

I have many things to tell you, but my head is burning. There is something wrong with me; and sometimes with lightning-like rapidity the thought flashes through me that it would be better after all if I died. December, 1853.

The Rheingold is done, but I also am done for. January, 1854.

I went to this music (Rheingold) with so much faith, so much joy; and with a true fury of despair I continued, and *have at last finished it. Do.*

With my terrible care my violent nervous disorder has also returned. *Do.*

. . this having to make a clean copy kills me. . . . the continual writing tires me to such an extent that I feel quite ill and lose the inclination for real work. March, 1854.

This dislike of work (composition) is the worst feature of all. I feel as if with it eternal night were closing around me. May, 1855.

My frequent nervous headaches. Letter to Wesedonck from London, 1855.

My mental disharmony is indescribable; sometimes I stare at my paper for days together,[3] without remembrance, or thought, or liking for my work. Letter to Liszt, July, 1855.

After much trouble the first half of the Valkyrie, including a clean copy, has been finished. . . . For the last week indisposition has prevented me from doing anything, and if this goes on I almost doubt whether I shall be able to finish this work from the *sketches. Do.*

I am making *a* tentative effort to rise from the sick bed on which I have lain again exactly three weeks . . . I have suffered from continual attacks of erysipelas *of the face.* December, 1855.

I am again, or rather still, unwell and incapable of anything. January, 1856.

I am continually at war with my health and fear a relapse at any time. *Do.*

I am waiting to see what my health will do; *my doctor* wants to send me to some watering-place, but to this I will not and can not agree. During 1856.

Again on a sick bed. To-day I am scarcely recovered, and fear another relapse. . . *If I* could only be well again! . . Another attack of erysipelas. . . This abominable illness has brought me very low. . . The slightest disorder of my stomach immediately affects my complaint. *Do.*

In that terrible month of May I was able only to look at your scores with a tired eye, and as through dark clouds. *Do.*

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[2] Compare this with the experience of Carlyle (v. p. 70, *Biographic Clinics*), who in the same way and from the same reason had to work "in a red-hot element," "with his heart's blood in a state of fevered tension," etc.

[3] Compare similar expression by Carlyle.

My only care now is the perfect recovery of my health. *Do.*

God knows I castigate my flesh by this cure . . . placed myself under Dr. Vaillant who conducts a hydropathic establishment here. . . . I feel sure of being completely cured of my ailment, which, after all, was caused by nervousness. July, 1856.

During my cure I must not think of doing any work. *Do.*

My catarrh has developed so that I may hope it will rid me of my usual winter illness. My health, too, is once more so bad that for ten days after I had finished the sketch for the first act of Siegfried I was literally not able to write a single bar without being driven away from my work by a most alarming headache. Every morning I sit down, stare at the paper, and am glad enough when I get as far as reading Walter Scott. The fact is I have once more overtaxed myself, and how am I to recover my strength? With Rheingold I got on well enough but the Valkyrie caused me much pain. At present my nervous system resembles a pianoforte very much out of tune. January, 1857.

Imagine that for a week and a half I have not been able to move from my chair. This illness was just what was required to finish me up. I had just resumed my work a little after a gastric and nervous indisposition, when I was obliged to give in again. December, 1858.

The weather is bad; I am absolutely alone, and seldom in the right mood for work. So I drag on amidst mists and moods. 1858.

My health still gives me much trouble. 1859.

My health is ruined for want of life and action. *Do.*

The last act of this child of sorrow (Tristan) is now on the verge of "to be or not to be"; a slight pressure of some spring of the vulgar fate, at whose mercy I am, might kill this child at the very moment of its birth. Everything with me depends now upon the turning of a hand; there may be a way, and there may be a stoppage, for I, my Franz, am in a bad way. . . . How miserably weak I feel as a musician. I know in my heart that I am an absolute blunderer. You ought to watch me when I am at it; now thinking "it must do after all," then going to the piano to puzzle out some wretched rubbish, and giving it up in a state of idiocy. 1859.

I feel as if I should break down in sight of the goal. Once at least every day I look at my book (Tristan) with a right good will, but my head is waste, my heart empty, and I stare at the mist and the rain clouds which, ever since I have been here, have debarred me even from the chance of shaking up my stagnant blood by pleasant exertions. . . work alone is to help me, but who is to help me to the possibility of work? 1859.

I have been severely ill these four weeks and my recovery is scarcely noticeable. I am still extremely weak. . . . I begin to perspire, and can write no more. *Do.*

I cannot write at greater length . . because I must absolutely conclude these lines. *Do.*

I am very slowly regaining my strength. What impedes my recovery, and indeed makes it impossible for the present, are the extraordinary exertions and excitements to which I have to expose my health, which is gradually coming back to me. . . . The proofs of Rheingold, which Messrs. Schott would have liked so much to have published at Christmas, have been lying on my table for seven weeks without my being able to make any progress with them. Letter to Liszt, 1860.

I seek rest and happiness no longer, but only breathing space for new labors, from which I reap the least enjoyment. 1860. Letters to M. v. M.

His exertions brought on a serious illness which threatened to develop into brain fever. Ellis, 1860.

I am doing my best, at the doctor's orders, with all kinds of strengthening diet. 1860. Letters to Wesedonck.

Through my weeks of illness. *Do.*

A night slept through from 1 to 8 a. m., is an ideal happiness to me which I only taste as an utter rarity. 1861. *Do.*

. . . traveled to the south of France by his doctor's advice. 1865. *Do.*

A doctor, whom I have consulted, recommends me Cannes. 1864. Letters to E. W.

I was hindered by terrible sickness from continuing my journey that day. *Do.* 1864.

"People often call me irascible, when I am simply ill," he used to say. (Fink.)

From 1866 to 1872 at Triebschen, Wagner displayed a creative activity which was simply incredible. (Chamberlain.)

Happiness has no history. The six years at Triebschen were the happiest of his whole life. *Do.*

Truly all our politics, diplomacy, ambition, feebleness, science—unfortunately, too, all our modern art—all these parasitic growths upon our life have no other soil upon which they flourish than our ruined stomachs. Letter to Liszt. (He seems to have thought vegetarianism "the keystone of regeneration.") We must abstain from meat and alcoholic drinks. Only adopted late in life.

I shall devote next summer to nothing but the possible recruiting of my health—for which on account of the wearing and increasing pains in my abdomen, I think of taking a very protracted course of waters at Marienbad and so on. If I find myself restored to health, etc. . . . In one of my perpetually sleepless nights I have tried to gain a little ease, etc. Letters to Heckel, 1876 (p. 99).

In 1878 a medical examination showed amyloid degeneration of the liver, spleen and kidneys. (Ellis.)

I am at the commencement of a course of waters, which may be very prolonged, etc. He had "a serious illness" in 1880. (Serious organic diseases at this time set in.) *Do.* p. 118, 1879.

Only to-day do I write you, as this mournful business had to be postponed because my health is such that my dear wife was afraid even to impart to me the news of the sudden death of your father. *Do.* p. 127, 1882.

During the last few months there was much dyspnea, especially after meals, but he was also busy writing several hours every morning. (Ellis.)

He died February 13, 1882.

The necropsy showed a much dilated stomach, internal inguinal hernia, much dilated heart, with fatty degeneration. Death occurred directly from rupture of the right ventricle.[4]

Headache, "sick headache," "dyspepsia," "nervousness," melancholy, insomnia, indescribable suffering—these were some of the more prominent symptoms that, in various mixtures, rendered so miserable the lives of DeQuincey, Carlyle, Darwin, Huxley, Browning, Whittier, Spencer and Parkman. Some had some of the symptoms all of the time, some had all of them some of the time. Wagner had all of them all of the time. All of them found these symptoms exactly proportioned to the amount of reading and writing that was attempted, and when the eyes were driven to their unphysiologic function the symptoms increased in intensity until life itself was threatened either by the disease or by the despair of the patient. Darwin and Wagner kept up the sad belief in the therapeutic uses of hydropathy all their lives. Carlyle and Parkman tried it, but soon perceived the folly of it. Every one of the eight learned that the only cure or relief to be found consisted in stopping reading and writing, i. e., in non-use of the eyes at near range, and in out-of-door exercise.[5] In addition to all the affections mentioned, Wagner had the mercuric artistic temperament, endured the bitterest mental anguish from non-recognition and hate of his musical work, and he was poor. He also suffered all his life from an intercurrent affection, erysipelas, which is a disease dependent on denutrition. There can be nothing in medicine more certain than that eye-strain causes denutrition: and nothing more certain than that Wagner had terrible eye-strain.

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[4] The letters to Pusinelli, published in the Bayreuther Blätter in 1902, have been kindly sent me by Mr. Ellis. They bear dates from 1843 to 1878. They begin with "I have headache," and continue with complaints of bad weather and bad health; of growing old and loss of joy (aged 33); of increase of illness; working at composition with consequent frightful suffering; with prayer for peace, peace; moans at the uselessness of life; regrets at inability to get a good photograph; sleeplessness. Baths and douches drive him nearly crazy. There is longing for his natural joyfulness; reiteration of physical and mental exhaustion; the thought of suicide; emphasis of his irritability, and of his inability to write another line, etc.

An illuminative and instructive excerpt is this: "As regards my health, I appear to those who should know as an instance of a peculiar order of men destined to a long life of work. I am very sensitive and irritable, quickly becoming feverish and perspiring, but never really ill and recovering from indisposition so soon that I seem ridiculous."

This was in 1870, when presbyopia and the release from the use of his eyes brought happiness and peace. Thenceforth there is no complaint of functional disease.

It should be noted that Wagner was a "delicate boy," "a pale, slim little chap," needing to "pick up strength," not profiting by instruction, liking others to read to him, "preferred rambling," "roaming about the country," an excitable and fitful sleeper, shouting and talking in his sleep, etc. But the intellectual and keen mind soon realized the sense of responsibility, and the boy picks up his school work equal to the best from 9 to 14, but at 25 his features have "the look of wanness and suffering." All of which is an excellent description of eye-strain in children, and can be duplicated from oculists' case records many times.

At about 30 years of age an excess of writing work overtaxes his nerves so much that he has "often sat down and wept for a quarter of an hour at a stretch," and he is a constant victim of a feeble stomach. At this time an extreme amount of work with his pen brought on the idea of sudden death which under the same circumstances reappeared many times during his life, and seemed to drive him to suicide. The doctors warned him against work, said, "determination of blood to the head," ordered leaves of absence for three months, etc.[6]

With each increment of added accommodation-failure things go from bad to worse every year until at the age of 35 he feels "too old" for undertaking his greatest art-work. Depression and suffering, "brokendownness," always follow near-work, and especially so in winter, his "mortal enemy," when vitality was always lowered, because there was more confinement in the house, and hence more reading and writing. A hundred statements grow ever clearer and clearer that writing and reading are becoming more and more impossible, produce greater and greater suffering, and that after each opera, poem, or literary work the ill-health is more tragical. He can not even undertake "to make a copy," music-writing is "natural and easy," and yet at the very beginning of such labor he is warned that he will undermine his health. Finally "the nerves of his brain are so overwrought that the writing is reduced to two hours a day, instead of five or six as formerly, and the writing of a few lines of a letter "sets him in violent commotion." As all good oculists instruct their patients, so Wagner found by experience he had often frequently to interrupt even his two hours a day of eye-work. Every job of composition or writing "takes much out of him," and he has "to rest it off." Headache, sleeplessness, the "working by spurts," "with long interruptions," a hundred such expressions occur, and the fear of death, the longing for it, or the resolve to seek it, is constantly appearing. One could gather hundreds of such expressions as the following: "If my head were but better": "I shall go mad"; "the sharp knife cutting into the nerve of my brain"; "feverishly tired in all my limbs"; "even this letter almost knocks me down": "I *mustn't* write, because I can't"; "my head is nigh bursting"; "every letter knocks me terribly up"; "the nerves of my brain are so racked that I have had to give up all writing and reading for a while"; "I even work a *little* hour a day now"; "a short hour a day now off and on"; "I shall shortly go crazy"; "letter writing I am now convinced, once for all, severely taxes me, and you, therefore, may flatter yourself if I manage to fill even this sheet of paper"; "completed my work very much exhausted"; "from noon till bedtime I never wrote another line"; writing a "longish letter prevents all other work that day"; "I *must stop*, my head's getting bad"; "even these few lines put me in a state of violent excitement"; "I ought to give up all reading and writing"; "even the shortest letter wearies me terribly"; "my work has been a perfect torture to me"; "this eternal communication by letter and print is terrible to me"; "my terrible melancholy"; "my nights are mostly sleepless"; "as soon as I bend my head toward theory the nerves of my brain begin to ache violently, and I feel quite ill"; "truly, writing is misery, and men of our sort should not write at all"; "the Rheingold is done, but I am also done for"; "this having to make a clear copy kills me"; "I begin to perspire and can write no more"; "the proofs are lying on my table for seven weeks"; "farewell, I must stretch myself full length on the divan and close my eyes." One may excuse this poor patient for not recognizing the simplest conclusion that the eyes were at the bottom of all this suffering. One may with difficulty excuse the medical men of his day. But there is no excuse for the most cruel of crimes—the brutal obstinacy which to-day makes a few ultra-conservative physicians, and even some careless oculists, deny that such symptoms in thousands of patients are due to eye-strain, and are daily cured by its correction.

Even to-day men are wet-packed, as Wagner and Darwin were all their lives, for astigmatism. The silly superstition that there is any mysterious virtue in cold water has been, and is still, filling quacks' pockets and exhausting the vitality of numberless patients. Let one with open mind read the hydropathic histories of Darwin and Wagner, and not have his gorge rise with indignation! The sole good done by this nonsense to offset the enormous evil was that while shivering in dripping sheets the poor eyes and brain could not be doing reading and writing. Hence the little seeming good, the raised hopes—and the succeeding despair—when ocular strain was again resumed.

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[5] The alert-minded reader will find in his biographic reading constant proofs of the rôle of eyestrain which have hitherto escaped notice. For instance, of Adolph, the nephew of Richard Wagner, a man devoted to literary work, I find the following suggestive paragraph: "His bodily strength now commencing to fail, with the advent of *maladies* brought on by the sedentariness of his occupation, Adolf resumed his favorite exercise of old, long walks, which he did not abandon until a year or so before his death." "For a year and a half or more I suffered from excruciating headaches; neither the allopathic nor the homeopathic doctors, for all their promises, helped me in the slightest. Spring came; I tore myself from my work, said good-bye to thinking and trudged for several miles a day—and still am doing it in November, whenever the weather is not wet or boggy."

Perhaps a more striking case is that of Beethoven. At the age of 53, when presbyopic strain is usually at its height, says Mr. Ellis: From April to mid August, 1823, the period in which the Ninth Symphony was actually written, Beethoven was a martyr to (neuralgic?) pain in his eyes, for the only time in his life Nor was that all. August 16 he gives his nephew a catalogue of his various ailments, which are such that he fears "they will soon cut short the thread of life, or wear it gradually away." A few days afterwards he writes his Archduke Rudolf, from Baden, "I came here on the 13th, very ill, but am better now I had recently been attacked again with my catarrhal affection; besides that my bowels are in the most wretched condition, and then also the trouble with my *eyes; in brief*, my organization was entirely shattered" (see Die Musik, 1902, pp. 1155-60). Save for the special symptom of the eyes, one might have mistaken it for Wagner writing to Uhlig.

[6] As I write this a patient comes in bright and happy and healthy who two months ago was the absolute reverse of these things, and whose life had been made as miserable as that of Wagner, and from the same cause. In his melancholy and suffering his greatest danger had been suicide. Great nerve specialists had drugged him to stupor, or had "*rested*" him nearly to death. Luckily he escaped the hydropathist and Christian Scientists. On this same day I also receive bitter criticism from a great ophthalmic surgeon that I am an exaggerator and hobby-rider. A great rest-cure man does not even acknowledge the receipt of a complimentary copy of "Biographic Clinics." And so on.

Wagner's clearest symptom was "sick headache"; migraine, megrim, hemicrania, nervous headache, or bilious headache are other names for this terrible affection. It causes a large number of other symptoms, and is itself of an infinitely varied type, according to the kind of near-work required, and the kind of organism of the patient. I have had thousands of patients with this disease, and 99 out of 100 were cured by spectacles alone. That sick headaches often disappear at the age of 50 to 60 is due solely to the fact that presbyopia makes eye-strain impossible. That the wrecked nervous system may sometimes go on exhibiting the symptoms after the exciting and direct cause has ceased, is a truism not only of medicine, but of common sense. "From 1871 onward he had an immense amount of business to transact," writes Mr. Ellis to me, "in connection with the building of the Bayreuth theater, etc., but of specific complaint of headache I nowhere find a trace in the later years." All the symptoms of Wagner's functional diseases ended with the establishment of presbyopia. The sick headaches, melancholy, fear of death, resolve to commit suicide, nervousness, insomnia, etc., and then, not because the King of Bavaria came to the rescue of this greatest of musical geniuses, not because the bad wife went and the good one came, not because success and popularity arrived; but it was because, his wife acting as an amanuensis, etc., he was not driven to the maddening eye-labor, and because presbyopia prevented the suffering which was the result of the least of such labor. One eye at last went out of function, and this helped also to establish some relief.

In Wagner's passport he is described as "wearing glasses." Outside of that simple statement no one ever seems to have seen him doing so, or spoken of the fact.[7] Mr Ellis has proof that seems to him pretty good that he did not wear them. It is of no consequence whatever. Any spectacles he could get would have neutralized his eye-strain. Were he living to-day he would in all probability not find any oculist or physician in Germany that would help him or care to help him in the one possible and effective way. There are a hundred oculists, nerve specialists and general physicians, even in the United States, who would smile scornfully at the idea that a patient having Wagner's symptoms could be cured by the correction of his ametropia. Fortunately there are hundreds of others who know the truth, and better, who practice it.

All through the latter part of Wagner's life he had one symptom, one of those which physicians call "objective," one that is alluded to, so far as I know, by no written word. In speaking to a great musician who knew Wagner, I mentioned this symptom, when he broke in with, "Of course! I had often observed the fact, but thought nothing of it." This symptom, which all of his physicians also ignored, comes out in most of the later photographs and the portraits, especially in those of Lenbach, the realistic painter. The left eye is turned out and up. Consult the portraits herewith reproduced. Some American oculists call this defect "hyperexophoria." In the effort to drag the eyelid away from and above the pupil of this eye the forehead is arched and wrinkled in concentric curves—an appearance noticed in many such patients. In the pictures in early life this combination of heterophoria and strabismus is not shown—because it did not exist. It had been overcome by strain, if it existed, and the strain had produced its effect.[8] Some of the later photographs do not show the outward and upward turning of the eye, a fact that demonstrates the temporary ability to overcome it by intense effort of fixation or côncentration of the attention. This turning of the left eye upward and outward is, as oculists know, a result of ametropia, and especially of astigmatism and anisometropia. It was a relief of eye-strain, an effect rather than a cause of it—a fact that the "graduated tenotomists," the cutters and snippers of eye-muscles, forget..

A bungling newspaper headline of a review was "The Eye of Genius"—as if geniuses had a peculiar sort of eye-defect. The geniuses are few, the slaves of civilization millions. Even Wagner and Carlyle and DeQuincey, as poor as they were, could stop near-range ocular work when they were compelled to do so, or limit it to "a little hour" a day. Sewing women, typewriters, clerks, many students, teachers, all poor handicraftsmen and women can not do so. They must work eight or ten hours every day, and all days, with the same ocular defects as the "geniuses." The tragedies to them are therefore greater than to the geniuses. There is no greater cruelty, no greater crime against humanity, than this of non-recognition and scorn of eye-strain.

This evidence presented by the portrait painter and the photographer of Wagner would not be needed by the expert oculist to prove the fact of the cause of his lifetime of awful misery. It adds the demonstration needed to convince general physicians and intelligent laymen. Many thousands of such non-medical persons who have been cured of appalling sufferings like those endured by Wagner would not need such a proof. The mere reading of the list of quotations I have gathered would make them shudder to think of their own past experience. Multitudes of others still await the finger of a divine science on their eyes. But that touch must first come to the eyes of the physicians, too many of them still blind by prejudice and tradition.

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[7] What Wagner thought of spectacles may be gathered from a sentence in a letter to Friederic Nietsche, written in 1874: "Overbeck delights me, because so far he has been able to do without glasses." Of course, his contempt was justifiable, and would be so to-day were he living in Germany.

7. Even in the later photographs the ocular defect is not always shown, chiefly probably because he was able by intense effort to overcome it and secure "binocular fixation." In a letter to Dr. Pusinelli Wagner says that the constraint and mechanical preparation for being photographed rendered it very difficult to procure a faithful likeness of his "so changeable expression." Whether "fixing" with both eyes or with but one would make a great difference in the expression. The vertical wrinkles between the eyes are also proof of eyestrain.

Implantation of Adipose Tissue After Evisceration of the Eye.—M. Uribe Troncoso of Medico, editor in chief of the *Anales de Oftalmologia*, publishes in No. 11, Vol. IV, his application of the method of autoprothesis after evisceration suggested in 1901 by Barraquer of Barcelona, Spain. The latter reported a single case thus treated, but has not published the remote results. After evisceration he introduced into the cavity left a piece of adipose tissue slightly smaller than the missing eyeball. Troncoso performed the same operation on a nine-months' babe whose purulent ophthalmia neonatorum had been neglected. The piece of adipose tissue was taken from the buttocks and had healed into place without diminishing materially in size when the child was last seen, nearly two months later. He much prefers this autoprothesis to the use of paraffin or any other foreign body. Less suturing is required to hold it in place than a glass prothesis.

Glinical Reports.

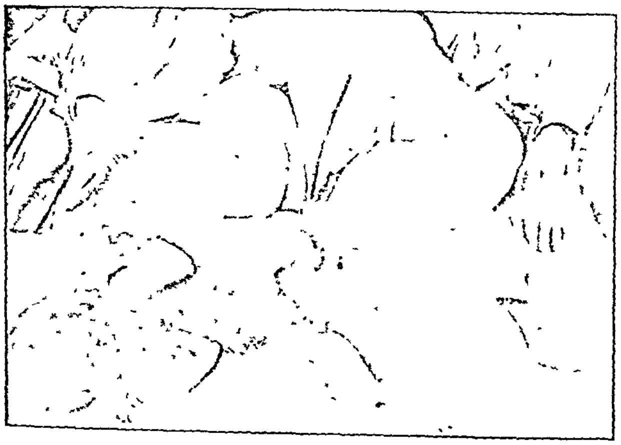
A CASE OF OSTEOMALACIA (?).

JAMES R. MONTGOMERY, M.D.
BUCKHORN, PA.

Mrs. A. N. was a large, well-developed woman with good family history. Both parents died of old age. There is no specific history nor any reason to suspect any. She has never borne any children. I have been her physician since 1882 and she had no serious illness in that time until 1888, when she suffered from a severe attack of sciatica which lasted about six months.

Ten years later, in 1898, she fell on an icy walk, fracturing the right femur and the left humerus. Both bones united in the usual time and with good results. At this time I noticed that she was becoming decidedly stooped, but attached little importance to it.

Nine months later, while walking across the room she either tripped, or her leg gave away, and a fracture resulted at the site of the former one. This was set in the same manner as the previous one, but for three months the bones did not unite. At this time, suspecting softening, I put her on powdered bone and in six weeks firm union had taken place, though with considerable shortening, but owing to the weakness, the pain on motion, and above all, the apathetic mental condition of the patient, she remained bedridden.



Soon after this the family removed to Bloomsburg and I lost sight of her.

Three years later, in March, 1902, I was requested to see her. At this time I found much emaciation of the upper part of the body and of the arms and a great increase in the size of the abdomen, pelvis and especially of both thighs. The left thigh was somewhat shortened and very painful. There was apparently total absence of the shaft of the femur in this limb. The mental deterioration was very marked. I prescribed acetanilid for the relief of the pain.

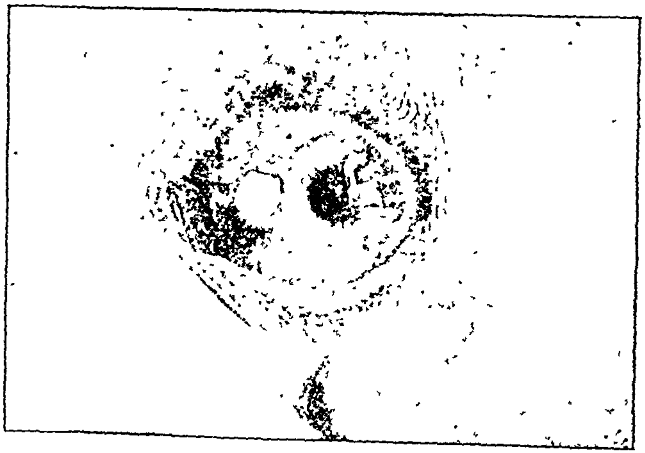
Several weeks ago Drs. W. M. Rebu and F. W. Redeker and I examined her. Her condition was pitiable. Her mental condition was one of extreme dementia. There was great emaciation of the upper half of the body. Her voice had that peculiar tone sometimes noticed in syphilis of the nose and throat. The bodies of the last three or four cervical, and nearly all the dorsal, vertebræ are *apparently* gone, seemingly, causing that part of the spinal column to arch back in a huge shapeless tumor. The abdomen is much enlarged and this, in connection with the emaciated upper half of the body, vividly recalls the pictures, so common a few years ago, of the poor famine victims of India. The pelvis is a shapeless mass and it is impossible to locate any of the usual landmarks. Both thighbones, as such, are absent and the thighs are drawn up and curved in a way that would be ludicrous were it not so pathetic. Her height, which in health was sixty-four inches, is now but forty-two, measuring from the left heel, while from the right one it is several inches less. The legs below the knees seem now to be undergoing the morbid process. The accompanying photograph, kindly taken by Dr. Redeker, will show her appearance.

The arms are partially paralyzed, probably from pressure on the spinal nerves. The bowels and kidneys are performing their functions in a normal manner. She suffers severely at times, but the pain is rendered bearable by the acetanilid. By my advice they have never given her opiates.

PAPILLOMA OF THE LIMBUS CONJUNCTIVÆ.

GEORGE H. HEILMULLER, A.B., M.D.
Ophthalmic Surgeon to Washington Asylum for the Blind.
WASHINGTON, D. C.

I was consulted by an optician about the case here illustrated and as I could not see the patient until three days later a collyrium containing boric acid and suprarenalin was ordered. The suprarenalin constricted the blood vessels of the wart, producing the intense white appearance. The larger vessels were not contracted to the same extent and hence appear more prominently on the photograph.



The patient had no warts on other parts of the body. It first appeared in October, 1902, and was then the size of a pin head.

The photograph being life size, the tumor needs no description, it being a simple cauliflower-like wart. The tumor is on the patient's right side, the white irregular spots on the left being the image of the photographer's screens.

It is interesting on account of the extreme rarity of its appearance in the limbus. Usually tumors of this region are malignant. It is the first case of the kind that I have seen in a service of one and one-half years as clinical assistant at the Royal London Ophthalmic Hospital, one and one-half years' study in the clinics of Germany and France, and five years' private practice. Papillomas are seen now and then in the region of the caruncle, from which they seem to grow.

The growth was removed by excision, the conjunctiva was not stitched, the bare surface being covered in 48 hours by proliferation of conjunctival epithelium. Microscopic examination showed a *typical* wart structure, i. e., vascular papillæ covered by epithelium and no tendency to infiltration of underlying parts by epithelial cells.

These warts must be thoroughly removed as they are prone to recur and also because they cause some disturbance of vision.

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SATURDAY, AUGUST 8, 1903.

THE RECENT ADVANCES IN OUR KNOWLEDGE OF AGGLUTINATION.

The agglutination or specific-serum test for typhoid fever has for some years held a deservedly high place as a practical aid to diagnosis, and it is now evident that the same test is becoming practically indispensable for the identification and differentiation of the numerous varieties of the typhoid bacillus, the dysentery bacillus, the members of the *B. enteritidis* group and allied forms. Every careful experimenter, however, has recognized the existence of manifold sources of error in the ordinary methods of application of this test, and will warmly welcome the recent advances in our knowledge which seem to lay bare the inner meaning of the phenomenon. It is, perhaps, more true of the agglutinins than it is of any other member of that remarkable group of bodies, brought to our knowledge by the researches of Ehrlich and his coadjutors, that immediate practical conclusions can be drawn from the somewhat abstrusely reasoned experiments.

Within the last twelve months the obscurity in which the real nature of the agglutinins has been shrouded has been illuminated by a series of remarkable investigations. It has been convincingly shown by Bail,[1] Joos,[2] Eisenberg and Volk,[3] and others that the agglutinins are bodies of complex constitution containing a combining (haptophore) and a functional (agglutinophore) group. When, for example, the serum of an animal that has been inoculated with a culture of the typhoid bacillus is heated to 65 C. or subjected to the action of weak acids, the functional group of the agglutinating substance is so altered that the heated or acidified serum is no longer able to produce clumping of the specific bacillus. The haptophore, or combining group of the agglutinins, however, in spite of this treatment, remains intact, as is shown by the observation that when the heated serum is added to a culture of the appropriate organism the bacilli, while not agglutinated, are so affected that they can no longer be clumped by the addition of unheated active serum. In other words, combination between the haptophore group of the heated agglutinins and the corresponding receptors in the bacilli has taken place, and when active serum is added to the bacilli, it finds the receptors already occupied, and is unable to manifest its agglutinating power. In a strictly homologous fashion, typhoid and cholera bacteria, when treated by heat or dilute acid, lose the power to be agglutinated, but remain still able to bind the agglutinin. The agglutinable moiety of the bacterial substance is destroyed by heat, but the combining portion persists. These researches of Eisenberg and Volk have been entirely confirmed by Wassermann.[4] We must, accordingly, assume the existence of two substances in agglutinable bacterial cells, namely, a stable, combining substance and a labile, functional substance, the integrity of the latter being essential to the production of visible agglutination. Corresponding to these two constituents of the agglutinable substance present in bacteria we must assume two similar groups in the agglutinating substance of the serum. Here again, one of these, the combining element, is stable while the functional is readily destroyed or altered by various agencies.

Wassermann[4] has sought to discover the relation that the agglutinins bear to the other substances present in immune sera, such as the precipitins and the amboceptors. The observation that the complete precipitation of an immune serum with a sterile bacterial filtrate destroys also the agglutinative power is taken to indicate that the agglutinin is one of the substances thrown down in the precipitate. That the agglutinin constitutes one of the elements of the precipitate produced by adding an excess of bacterial filtrate can, in the light of Wassermann's researches, hardly be doubted. On the other hand, this author concludes that the agglutinin and immune body (amboceptor), at least in the case of *Bacillus pyocyaneus*, are two completely independent substances. The agglutination test (Gruber-Widal reaction) and the immunity test (Pfeiffer's phenomenon) are, therefore, to be regarded as two separate and unconnected reactions, as, indeed, has been inferred on other grounds by a number of previous workers.

Wassermann's researches on the partial agglutinins led to the conclusion also already reached by some other observers, that biologically distinct varieties of bacteria may possess common receptors, so that differentiation on the basis of agglutinating properties is in many cases difficult, in some impossible. In differentiation tests investigators should adopt the rule that the extreme agglutinating value of the serum for the specific bacillus be used as a basis rather than any arbitrarily selected dilution standard. Thus a serum, the limit of whose agglutinating power is 1/20,000, can not be legitimately used for species differentiation in so low a dilution as a serum whose agglutinating power is only 1/500, since in similar dilutions the former would be much more liable to contain partial agglutinins for other species than the latter. It is further evident from the researches of Smith[5] and others that the reasons for the presence or absence of common receptors in biologically related species are by no means clearly understood.

Joos[6] has recently published investigations on the different agglutinins of typhoid serum, which demonstrate with particular vividness how serious are some of the difficulties to the successful study of these substances, and how many pitfalls beset the steps of the unwary. This author has shown in a series of carefully planned experiments that living typhoid bacilli contain two different agglutinable substances which may be distinguished from one another by their different resistance to heat; one (the α-agglutinogen) is quickly destroyed at 60 to 62 degrees; the other (β-agglutinogen) can resist the action of this temperature for at least several hours. The inference from even this brief statement is obvious. Much work that has been done by previous students of the agglutinins is without sufficient regard to uniformity in the use of heated or unheated cultures, and it is evident that if Joos' statements are confirmed a fruitful source of error is here uncovered.

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[1] Archiv f. Hyg., xlii, 1902, Heft. 4.

[2] Zeitschr. f. Hyg., xxxvi, 1901, p. 422; xl, 1902, p. 203.

[3] Zeitschr. f. Hyg., xl, 1902, p. 155.

[4] Zeitschr. f. Hyg., xlii, 1903, p. 267.

[5] Journal of Medical Research, ix, 1903, p. 270.

[6] Centralbl. f. Bakt., xxxiii, 1903, p. 762.

At least one important practical conclusion to be put to immediate use can be drawn from the results of all these researches, whatever value one may attach to the more or less theoretical interpretations by which they are accompanied. This is the need for extraordinary precaution in the whole technic of the agglutination test, whether the test be employed for diagnosing disease or for differentiating allied species of pathogenic microbes. It must be recognized that the agglutination phenomenon is a remarkably complicated process, and that apparently justified conclusions may be wholly vitiated by inattention to seemingly trivial details, such as the age, character and condition of the culture used for immunization, the ages of the serum as possibly influencing the formation of agglutinoids, the nature of the fluid chosen for diluting the serum, the degree of serum dilution, the age of the culture on which the serum is tested, alkalinity of the nutrient medium on which the culture is grown, the difference in the agglutinability of various bacterial stocks and many other factors. It is inevitable, if, from the purely human standpoint, perhaps somewhat unfortunate, that the whole tendency of advancing science should be to show that the apparently simple is in reality endlessly complex.

THE POINT OF ATTACK IN PULMONARY TUBERCULOSIS.

If one critically considers the number of points in medical science that are positively established he may be surprised at finding how very few they really are. There are not many topics, however hackneyed they may seem, that do not offer plenty of opportunity for fruitful investigation, for there are always new methods that can be tried, and new positions from which to view the facts. This absence of finished study does not, however, reflect on medical science, as might seem at the first thought. Every other branch of science is in the same condition, more or less according to its age and nature. It is told of a scientist who once made the remark in the presence of a number of his fellows that there was no subject that was not still open for fruitful research. The statement was questioned, with the result that the speaker agreed to undertake research in any topic that might be selected by his challengers. After some consideration "water" was chosen as being a substance that had been pretty thoroughly investigated. A long period of labor was followed by a monumental publication on this subject, in which were produced many new and important observations that added greatly to chemical and physical knowledge.

It might seem that the subject of pulmonary tuberculosis should by this time have been worked out to completion, in view of our familiarity with the disease and its cause, the enormous material it offers for study, together with the ease of its experimental production. However, the manner of production of the initial lesion, among other things, is still a matter of discussion, dispute, and study. For a long time we have been content with believing that the process started in some bronchiole or air sac, into which a bacillus had been inhaled, and where it happened to find proper conditions for multiplication instead of meeting the more common fate of being swept out by the cilia, or devoured by a phagocyte. However, there were always those who contended that the bacillus reached the lung by some other route than the bronchi; that is, by either blood or lymph, but they were in the minority. So recently as 1899 the question seemed settled by the elaborate research of Birch-Hirschfeld. In an enormous autopsy material he found a small number of cases, thirty-two in all, that offered proper conditions for the study, namely, a single active focus of the disease. Twenty-eight of these foci were located in the mucosa of a middle-sized bronchus, most often the one going to the posterior part of the apex, where, of its entire extent, the lung has the least respiratory movement. There were but three of the series that showed what appeared to be a primary interstitial lesion that might suggest origin in the blood or lymph vessels. The conclusions drawn from this study were that the prevailing idea was correct; that the bacilli that caused the disease had been drawn into the bronchioles, where, in the part of the lung least capable of removing them by coughing, they lodged, multiplied, and produced a tuberculous lesion. With an abundant material and acknowledged ability, this research of Birch-Hirschfeld seemed conclusive. Not so to all, however. Aufrecht,[1] soon after, published his reasons for believing that pulmonary tubercles usually arise from vascular lodgment of the bacilli, and he has urged this view consistently since.[2] The bacteria enter the blood, he believes, through the tonsils, or cervical, mediastinal or mesenteric glands, particularly the tonsils. They lodge in small branches of the pulmonary artery, where they produce an infarcted area, which soon becomes cheesy, constituting a tubercle. A miliary tubercle, according to Aufrecht, is a thrombosed vessel with thickened walls. In support of Aufrecht's views, we may call attention to the fact that numerous recent studies have indicated that tubercle bacilli do quite readily enter the blood stream without evident local lesion, notably through the intestinal mucosa into the thoracic duct. However, to most physicians the bronchogenic invasion will still seem the more probable.

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[1] Berliner klin. Wochenschr., June 25 and July 2, 1900.
[2] See article in the Journal of Tuberculosis, April, 1903.

And now comes a Russian, Abrikossoff,[3] who, pursuing the method of Birch-Hirschfeld of collecting suitable primary lesions, studied them in serial sections, with the aid of the elastic tissue stain. This stain rendered it possible to recognize structural landmarks too far altered to be recognized by other methods, and disclosed the fact that the center of the tubercle was really in a bronchiole, although the involvement of the vessels described by Aufrecht was readily seen. He believes that the process begins in the bronchial wall, and that the involvement of the vessels is secondary, although he was able to demonstrate that it is possible to produce foci of tuberculosis in the lung by injecting bacilli into the ear veins of rabbits; and these foci were in structure quite similar to the foci of bronchopneumonia observed in his human cases. His work, then, on the whole, agrees with the idea that primary bronchial location of the lesion is the rule, although indicating that it is possible to have quite similar lesions produced by bacilli reaching the lungs through the blood stream.

In this connection Grober's[4] experiments are of interest. He found that if suspensions of india ink were injected into the trachea of dogs, within six hours the particles could be found free in the pleural cavity. This, of course, indicates the possibility that primary tuberculosis of the pleura can be produced in a similar way by inhaled bacilli. If the ink were injected into the tonsils the pigment entered the cervical glands, and from there passed to the pleura, particularly that over the apex, but also some reached the pericardium and diaphragm. Thus another suspected route of invasion is proven to be possible.

NEW INVESTIGATIONS CONCERNING THE FIXATION OF TETANUS TOXIN BY CEREBRAL TISSUE.

When cerebral tissue is mixed with tetanus toxin, there occurs some form of union between the two which has been spoken of as a neutralization of tetanotoxin, due to its combining with the lateral chains or receptors of the nerve cells. This phenomenon was studied especially by Wassermann and Takaki, and by them and others marshalled into line as one of the strongest supports of Ehrlich's side-chain theory of cytolysis and immunity. Some recent experiments by Besredka and others are of interest in connection with the study of toxins. Besredka[1] finds that washed tetanized cerebral tissue (large quantity of tetanus toxin is added to the cerebral tissue of guinea-pigs, and after from six hours to three days the tissue is washed until the wash-water is wholly harmless when injected) produces fatal tetanus in mice in doses of one or two drops. This experiment certainly shows that more tetanotoxin is fixed by the cerebral substance than is neutralized. Besredka further shows that tetanus antitoxin has the power to abstract from tetanized cerebral tissue all the toxin it has fixed, thus leaving the tissue free to attach to itself again just as much toxin as before.

Dmitrievsky[2] endeavored to determine the relative amounts of antitetanotoxin in brain tissue and blood of immunized animals. He reasoned that if the overproduction of receptors in the nerve cells constitutes the source of the antitoxin, then the brain of immunized animals, at least at certain periods of immunization, would be richer in antitoxin than normal brains and than the blood of immunized animals' brains. He found that the blood of animals thoroughly immunized always contains more antitoxin than brain tissue, while this tissue in animals only partially immunized does not differ in its antitetanic power from normal brain substance. Whatever increase in antitetanic power—and it was always found to be only slight—there is in the brains of thoroughly immunized animals, Dmitrievsky ascribes to an increased amount of antitoxic blood retained in the hyperemic cerebral capillaries. The conclusion that the French investigators urge especially is that cerebral substance contains some principle that fixes tetanus toxin, but this principle is not the same as the antitetanin of antitoxic serum, and, consequently, the phenomenon of fixation of tetanotoxin by brain tissue can not be urged in support of Ehrlich's theory. It is not intended to do much more than merely to give the trend of these interesting studies. It may be pointed out, however, that, while cerebral tissue in the test-tube of Besredka's experiments failed to neutralize the tetanotoxin, it must be very doubtful, indeed, whether one is allowed to assume that brain tissue acts exactly in the same way when in the living body. At all events, the somewhat disturbing conclusions of the keen French investigators will be sure to stimulate the defenders of Ehrlich's theory to renewed inquiry.

A RADIUM CALCULATION.

A correspondent of the English periodical, *Nature*, has been calculating the amount of radium that would be required in the sun's composition to maintain its outgo of energy in the form of light and heat. Taking the most reliable figures as to the radiation of radium and of the sun, he finds that three and six-tenths grams in each cubic meter of the sun's bulk would be all that is required, excluding the possible, and, indeed, probable, conditions of the solar surface that would make even a smaller amount effective. These figures are rather startling, and aside from their general upsetting of accepted theories of the sources of solar energy, are formidable from another point of view. It is, perhaps, a fortunate thing that this new element, or whatever it is, is so scarce and hard to get. An ounce, or even a gram of radium might be an awkward thing to handle, and the isolation of a larger quantity be a positive danger to the community. In quantity, it might realize the destructive powers of the "heat ray" used by the Martians in H. G. Wells' fiction, "The War of the Worlds." At present, the material has been studied just enough to excite the imagination, and its capabilities in that way seem limitless.

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[3] Cent. f. Allg. Pathol., 1903, xiv, 369.

[4] Deut. Arch. f. Klin. Med., lxviii, 296.

[1] Ann. de l'Institut Pasteur, 1903, xvii, 138-147.

[2] Ibid., 148-160.

CHLOROFORM AND ITS DANGER.

The report of the special chloroform committee of the British Medical Association, published as a supplement to the *British Medical Journal* of July 18, especially that portion by Drs. Sherrington and Sowton, has a particular interest in view of the fact that, in spite of its known dangers, chloroform still holds its own as a popular anesthetic in surgery. The conclusions are, practically, that chloroform is a paralysant to the heart muscle; that it is rapidly taken up by the tissue, and that its paralyzing action is dependent in degree on the solution's percentage in the heart. They figure that 300 cubic centimeters of a 2 per cent. admixture of air and chloroform vapor in the arteries of a heart of an adult man would practically annul cardiac action. The practical application of this fact, however, requires further data as to the quantity reaching the cardiac arteries, the tension of the vapor in the mixture inhaled, etc. While a percentage of 2 per cent., or lower, of chloroform in the vapor inhaled is estimated to be within the limits of safety with moderate quantities inhaled, and a certain immunity is produced in the prolonged administration, the danger elements are not all eliminated. There still remains the possibility of idiosyncrasy which Sherrington and Sowton think existed in their experiments on cats, and which may in the more complex human organism be a still more serious probability. It is the unexpected that happens in accidents from anesthesia, and in chloroform we know that we have a direct cardiac poison, the absolute manageability of which under all conditions is by no means thoroughly established by this investigation. We can not fully indorse the view of the *British Medical Journal* that with inhalers supplying definite percentages, the probability of perfect safety in the use of this powerful agent is assured in the near future.

RESEARCH AND TEACHING IN CONNECTION WITH STATE INSTITUTIONS.

It is significant of the trend of the time to note that in several states active agitation in favor of the establishment of state pathologic institutes is going on. In New York the step has been definitely taken, and the Pathologic Institute of the New York state hospitals, as now reorganized and directed, promises to fulfill the expectations of its founders. Michigan has quietly advanced to the stage in which a separate building for the institute has been provided, equipment and salary assured, and it now remains to secure a director of this, a clinical and pathologic laboratory connected with the state university and a part of the state hospital's system of Michigan. The subject of a central laboratory has been brought to the notice of the board of control of the Iowa state hospitals. In Ohio the project was revived at the last meeting of the Ohio State Medical Association. Resolutions were adopted favoring the plan proposed by Ohlmacher in his paper[1] before the general session, and a committee appointed to advance the movement. The Ohio plan of having the initiative taken by the State Medical Association seems especially good, since this should tend to keep the control of the central laboratory in the hands of the medical profession of the state. As it is now organized, the medical profession of Ohio is in a position to secure favorable attention from the officials representing the people of the state, and with active work on the part of the committee the prospects for favorable results are bright. The day has passed when the various medical institutions of the states shall have fulfilled their duty to society by attending to administrative details alone. The medical profession and the intelligent public demand that these great hospitals with their thousands of patients and millions for maintenance shall be more than immense public hotels. Their vast material should be turned to the use of science. A small portion of the money set apart for their maintenance should be used toward investigating the nature, cause, treatment and prevention of the diseases for the care of which they are established. In the East, especially in Massachusetts and New York, a scientific spirit animates the medical staff of the state hospitals, several well-conducted laboratories are in flourishing condition, and contributions of scientific value have been produced. The movement is coming westward, as indicated by the facts above outlined, and it only remains for our state medical associations to vigorously bend their energies toward the realization of a scheme vastly important in its scientific and humanitarian promises.

Medical News.

ILLINOIS.

Swindlers Arrested.—Chester Parker and W. Fletcher Hall, so-called "magnetic physicians," who swindled many people of Peoria out of sums varying from $25 to $100 and decamped to Omaha, have been arrested there and will be brought back to Peoria for trial.

Quarantine To Be Raised.—Carterville, Marion and Murphysboro, which have been maintaining a quarantine against Herron, Williamson County, where there have been several cases of smallpox and ten deaths, have been requested to remove the embargo, as the situation has so improved as to render quarantine unnecessary.

Reforms at Dunning.—Superintendent Podstata of the Cook County Institutions at Dunning, announces that he will open a training school for nurses this winter. He has had on trial an attendant charged with having used violence to a patient, has found him guilty and discharged him, and has in hand an investigation of a charge of cruelty against a female attendant.

State Society Incorporated.—Incorporation papers of the Illinois State Medical Society were filed at Springfield, July 23. The object of the society is to promote the science and art of medicine. The incorporators are Dr. David W. Graham, Chicago; Otho B. Will, Peoria; William O. Ensign, Rutland; Henry C. Mitchell, Carbondale; L. J. Harvey, Griggsville; J. F. Percy, Galesburg; Carl E. Black, Jacksonville, and Edgar P. Cook, Mendota.

Chicago.

Held up and Robbed.—Dr. Charles M. Oughton was recently held up in front of his residence and robbed of a pocketbook containing $60.

Personal.—Dr. and Mrs. G. E. Fosberg sailed on the *Occanic* for Liverpool, July 29.——Dr. E. Fletcher Ingals is taking a short trip to Europe.

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[1] The laboratory movement in Ohio's state hospitals.

Absurd Charge.—A constable who had left an umbrella in the office of Dr. T. Bassett Keyes, arraigned Dr. Keyes before a justice of the peace on the charge of larceny. Although the defendant's attorney made the plea that umbrellas were common property, the physician was acquitted.

Low Mortality.—Notwithstanding—or because of—the unusual character of the weather during the month just ended, says the Chicago Department of Health, the July death rate, 14.92 per 1,000 per annum, is more than 16 per cent. lower than the average of the ten previous Julys, which was 17.84. The highest July rate of the decade 1893-1902 was 24.43 in 1894; the average rate of the first five years was 21.15, and of the second, 15.12. This shows a decrease of nearly 30 per cent. in the two periods, and is evidence of the increasing healthfulness of Chicago. Had the death rate of the first half of the last decade still obtained there would have been 3,092 deaths last month instead of the 2,390 which actually occurred.

MARYLAND.

Baltimore.

Deaths.—There were 220 deaths for the week ended July 25, a rate of 20.97 per 1,000 per annum, that for whites being 17.06 and for colored persons 42.49; 100 were of children under 5; 42 new cases of typhoid fever were reported.

Summerers.—Dr. William Osler is summering at St. Martin's, Guernsey, England.——Dr. William E. Moseley sailed for Liverpool, July 24.——Dr. Harry Friedenwald sailed for Bremen, July 21.——Dr. J. Williams Lord will spend the next two months near Salem, Mass.——Dr. G. Frank Jones is at White Sulphur Springs, Va.——Dr. J. W. Smith is making a tour of Colorado.——Dr. Andrew H. Whitridge is in London.——Dr. James A. Bond of Westminster, Md., is in Paris.——Dr. John G. Jay sailed for Europe, August 1.——Dr. John N. Mackenzie is spending August at Narragansett Pier.——Dr. B. Merrill Hopkinson is at Prout's Neck, Maine.

The Bahama Expedition Returns.—The expedition of investigation sent to the Bahama Islands, June 1, by the Baltimore Geographical Society and Johns Hopkins University, returned July 30. Many valuable data were obtained. Dr. Penrose, in charge of the medical department, examined 1,100 sick persons. Owing to the poor living and small fees of physicians, the natives have but little medical treatment. Leprosy and other skin diseases were very prevalent, and were closely studied. On several occasions the pilots and provision vendors were found to have leprosy. The degenerates of Abaco, descendants of the Torys, who intermarried closely, were studied. No yellow fever was found, and only two cases of malaria. Many species of mosquito were found and brought back to be studied by Dr. Howard, government entomologist.

NEW YORK.

Personal.—Dr. Roswell Park, Buffalo, is improving from his recent attack of erysipelas.——Drs. Charles Cary and A. L. Benedict, Buffalo, have returned from Europe.

Hospital Enlarged.—The trustees of the Buffalo General Hospital have added eighteen private rooms and nine semi-private rooms to the hospital.

Crippled Children Have Outing.—The little patients of the New York State Hospital for Crippled Children were the guests of the "Robins' Nest" at Tarrytown, a branch of the New York Hospital for Ruptured and Crippled, and had a very enjoyable outing.

Saratoga Spring Water.—The United States Government has sent Prof. F. B. Weeks of the Geological Survey to Saratoga to examine and prepare a report on the mineral springs of that section of the state. This report, containing scientific and reliable data, is to form a part of the novel mineral springs exhibit to be included in the World's Fair at St. Louis.

New York City.

Personal.—Dr. R. Husted Bell has assumed editorial charge of the *Medical Mirror*, as successor to the late Dr. I. N. Love.——Dr. Henry L. Shively has been appointed a visiting physician to St. Joseph's Hospital.

False Death Certificate.—Dr. Frank A Bigelow, the physician in charge of the New York branch of the Koch Lung Cure, was held by Magistrate Hogan for trial in the Court of Special Sessions on the charge of making a false death certificate.

City Hospital for Consumptives.—The commissioner of charities has applied to the Board of Estimate for an appropriation sufficient to permit the erection of a new out-of-town hospital for consumptives. It is recommended that accommodations be provided for 500 patients, and that cheap wooden buildings be erected for dormitory purposes. It is urged, however, that the hospital grounds should cover 250 to 400 acres. It is estimated that the land will cost from $100 to $250 per acre, and that the annual cost of maintenance will be about $182,500.

Suit Against Hospital.—The death from burns of a patient who was being prepared for operation in the General Memorial Hospital has already been noted in these columns. The woman's husband has now begun an action in the Supreme Court against the hospital to recover $100,000 damages, alleging that the death of his wife was due to the carelessness and inexperience of the nurse who, instead of making use of the electric light, placed a lighted candle in a tumbler on the bed, and thus caused the ignition of the alcohol and ether which she was using. It is said that this suit involves certain novel points.

Office Thief and Crank.—Brooklyn and the upper west side of Manhattan have been "worked" by a young man of 22, calling himself variously Frank Edwardson, Edwards and Henderson, and giving an address as 2008 or 2274 Eighth Avenue. He is five feet six inches in height, weighs 130 pounds, has a clean shaven face, hollow cheeks and bad teeth, and dresses in a dark gray suit and dark gray felt hat. He gives his occupation variously as electrician and piano tuner, and complains of sudden attacks of choking due to spasm of the esophagus. He comes in with such an attack, but on engaging him in conversation it is noticed that his difficulty gradually subsides, and he impresses one as a nervous crank. His visits in a number of instances have been immediately followed by robberies.

PENNSYLVANIA.

Typhoid Epidemic.—An epidemic of typhoid fever is reported at Lancaster; the infection has been traced to the pollution of a well by a cesspool.

Investigation of Milk.—Two deaths at Johnstown, traceable to the use of drugs to preserve milk, are said to have prompted State Dairy and Food Commissioner Warren to undertake an investigation of the milk in the market. One thousand samples were obtained throughout the state. Of these, 75 per cent. contained formaldehyd or other preservative fluid. Many suits against dealers are likely to be instituted. A crusade has also been begun against the manufacture and sale of deleterious flavoring and coloring extracts used in beverages. Some of the manufacturers have been arrested and held in bail. The attorney-general has notified Commissioner Warren that he has ample grounds for prosecuting managers of almshouses and penal and charitable institutions of the state who furnish oleomargarine to the people under their charge.

Philadelphia.

New Hospital.—A new hospital, to be known as the Union Mission Hospital, is to be built by the John B. Stetson Company, on Fourth Street, below Montgomery Avenue. The hospital is to be a three-story fireproof brick structure, 65 by 102 feet. A roof garden will surmount the building.

After Toy Pistol Dealers.—Acting on the advice of District Attorney Bell, in a communication sent by him to Director of Public Safety Smyth, the latter has detailed detectives to investigate the sale of toy pistols from which resulted the recent deaths from tetanus. The district attorney will co-operate in the investigation.

Disclaimer.—In regard to criticism of the conduct of the Municipal Hospital, Director Martin positively disclaims any intention to criticise Dr. William M. Welch, for twenty-five years physician in charge. Dr. Martin is quoted as saying: "The feeling of the department is that the best and most efficient administration of the Municipal Hospital could be accomplished by a resident physician, but there is no intention of dispensing with Dr. Welch's services, since in the medical work of the city, in both ability and experience, he is invaluable." Dr. Welch's management of the institution was recently strongly endorsed in resolutions passed by the Medico-legal Society.

Polyglot Talks to Mothers.—The department of health has arranged to give a series of plain talks to mothers on the care of babies. Representatives of church guilds, day nurseries, college settlements and other charitable organizations arrange for the time and place of meeting. The following physicians have volunteered to give these lectures: H. C. Carpenter, W. S. Cornell, Frederick Fraley, Jr., Henry Golden, W. G. B.

Harland, Wilmer Krusen, W. W. Naylor, Francis Patterson, Robert N. Willson, and S. Doskow, D.D.S. Some of the talks have already been given, and part of them are to be given in foreign languages.

RHODE ISLAND.

To Suppress Smallpox.—Woonsocket has appropriated $1,600 in addition to sums previously appropriated for the purpose of suppressing the smallpox epidemic in that city.

Smallpox at Valley Falls.—On July 17, nine cases of smallpox were reported to the health officer, some of the patients being operatives in mills at Valley Falls, Central Falls and Lonsdale.

Fiske Prize Awarded.—The Caleb Fiske Prize of $250 for the best essay on "Auto-intoxication as a Cause and Complication of Disease" was awarded to Dr. W. Lewis Chapman, Providence. The subject for the prize essay next year is "The Action of Light as a Therapeutic Agent."

Free Camp for Consumptives.—The free camp for consumptives, prepared at Foster, under the direction of Dr. William H. Peters, Providence, was ready to receive patients, July 9. Out of 28 applicants for the open-air treatment, 21 have been accepted as cases in which the disease can be arrested.

TEXAS.

In Hadra's Memory.—The Dallas County Medical Society held a special meeting July 13 to take suitable action on the death of Dr. Berthold E. Hadra.

Texas Sanitarium.—The Texas Sanitarium, recently incorporated, has purchased 40 acres of land and buildings near Leona, and will complete and equip the buildings as a sanitarium.

Personal.—Dr. J. Shelton Horsley, El Paso, has accepted the chair of principles of surgery at the Medical College of Virginia, Richmond. He has also been elected to one of the positions of attending surgeon to the Memorial Hospital. He expects to leave El Paso on July 6, and after a vacation will locate in Richmond by the middle of August. Dr. Horsley has turned over interests in St. Luke's Hospital to Dr. C. B. Hanson.——Dr. John O. McReynolds, Dallas, has had conferred on him the degree of LL.D. by the Kentucky University.

UTAH.

Smallpox.—In Salt Lake City, on July 19, there were 10 cases of smallpox, and at Huntsville, where there are more than 15 cases, the citizens claim that quarantine laws are absolutely ignored.

Physician Acquitted.—Dr. Edward S. Payne, Salt Lake City, on trial for murder in the second degree for the death of Miss Anna D. Hill, who it was alleged died in his office after a criminal operation, in December last, has been acquitted.

Site for Isolation Hospital.—An eighty-acre tract of land near Terrace Heights has been selected as the site for the new isolation hospital for Salt Lake City, and bids were asked for the construction of a building to accommodate 75 patients.

Personal.—Dr. Haymond J. Powers, Ogden, who recently took aconite, mistaking it for other medicine, and was very ill for a time, has recovered.——Dr. Andrew J. Hosmer, Salt Lake City, has been appointed surgeon of the Salt Lake division of the San Pedro, Los Angeles and Salt Lake Railroad.

WASHINGTON.

Hoquam Hospital.—Hoquam is to have a new hospital, to cost about $10,000, with 35 ward beds and 16 private rooms. The building is to be completed October 1.

New Hospital for Spokane.—Ground has been broken for the new St. Luke's Hospital, Spokane, to cost about $26,000, all but $8,000 of which has already been subscribed.

Personal.—Dr. Thomas B. Curran, Tacoma, has been appointed county physician, vice Dr. Fred C. Miller, deceased.——Dr. H. W. Allen has been appointed health officer of Spokane, succeeding Dr. De Witt C. Newman, resigned.

Physicians Fined.—The Supreme Court has sustained the lower court in the case of Drs. James G. Stewart and Oscar V. Lawson, Seattle, convicted of conspiracy to obtain possession of the examination questions used by the State Board of Medical Examiners at its session in January. A fine of $500 was imposed in each case, and this fine, the Supreme Court holds, must be paid.

State Board of Medical Examiners.—On July 9 the State Board of Medical Examiners elected Dr. Frantz H. Coe, Seattle, president; Dr. H. A. Wright, Wilbur, vice-president; Dr. Philip B. Swearingen, Tacoma, secretary, and Dr. J. M. P. Chalmers, Vancouver, treasurer.——Dr. Caspar W. Sharpless, Seattle, has been appointed a member of the board, vice Dr. William C. Cox, Everett, term expired.

WISCONSIN.

Damages Awarded.—In the suit of Peter Hay against Dr. John Baird, Superior, for alleged malpractice, the jury awarded the plaintiff damages of $1,624.50.

Insanity on the Increase.—The report of the State Board of Control for the fiscal year ended June 30 shows an increase of 197 cases of insanity in the state, or nearly four per cent.

State Board Changes.—The item regarding Dr. L. E. Spencer, Wausau, in The Journal of June 20, was incorrect in this particular, that he succeeded Dr. J. Henry McNeal, Fond du Lac, term expired, as member of the State Board of Health, and not Dr. George W. Harrison, Ashland, who is still a member of the board.

Medical Examiners.—At its meeting in Madison, July 16, the board elected Dr. John R. Currens, Two Rivers, president, and Dr. Filip A. Forsbeck, Milwaukee, secretary and treasurer. These officers, and Dr. John V. Stevens, Jefferson, were chosen to represent the board in regard to interstate reciprocity of license.——Drs. Adellon P. Andrus, Ashland, and Frank P. Klahr, Horicon, have been appointed members of the board, succeeding Drs. Harvey B. Dale, Oshkosh, and Charles E. Quigg, Tomah. Dr. Wilbur T. Sarles, Sparta, and Louis F. Bennett, Beloit, have also been appointed members of the board.

GENERAL.

Opium Investigation.—The Philippine commission has appointed a committee to co-operate in an investigation of the use of opium in Japan, China, Singapore and Burmah. Major and Surgeon E. C. Carter, commissioner of public health in the Philippines, Bishop Brent of the Episcopal Church, and Dr. Albert are the federal members of the committee.

CANADA.

Montreal May Build a Hospital For Consumptives.—The medical men of Montreal are presenting to the city council at its next regular meeting an important petition. This is backed by the provincial board of health, and will call on the city to vote a generous sum for the erection of a hospital in Montreal for the treatment of tuberculosis.

Annual Report of British Columbia Board of Health.—Dr. C. J. Fagan, secretary of the British Columbia Board of Health, has issued his annual report. He states that the scheme for the establishing of a sanitarium for tuberculosis has now so far developed as to be capable of being put into practical operation within a short space of time. A site has been selected near Kamloops.

Vaccination in Montreal.—Over three thousand children left the Montreal schools this year refusing to be vaccinated. Last year the number debarred totaled 4,917. Dr. Laberge states that there is a steady growth among the citizens in favor of vaccination. That vaccination is beneficial has been abundantly proven in Montreal by the fact that of the last three hundred cases in that city, but one had been properly vaccinated. It is proposed to so amend the vaccination law as to leave pupils no option in the matter.

Smallpox in Cape Breton.—The spread of smallpox in the town of Sydney Mines, C.B., continues unabated, despite the efforts of the health authorities to check it. There are at present thirty cases in the hospital, and some fifty cases under quarantine. The people are averse to carrying out the instructions of the health authorities, hence the failure in the attempts to check the spread of the disease. General vaccination has been ordered, and four or five medical officers are conducting these operations. The disease has been prevalent in the town since May, since which time there have been upward of 100 cases. The town is isolated from outside intercourse as far as possible.

A Handsome Bequest to McGill Medical Faculty.—By the will of the late Mr. James Cooper of Montreal, the medical faculty of McGill University receives $60,000. The benefaction takes the form of an endowment to establish and maintain a chair of internal medicine, on lines to be determined by the medical faculty themselves. The fund is to be known as the Cooper Endowment Fund, and is to be payable two years after the date of death. A sum of $25,000 payable at the same time as above, is also left to the hospital for crippled children now being organized by Dr. A. McKenzie Forbes, to be known as the Children's Memorial Hospital to Our Late Queen Victoria. Drs. T. G. Roddick, M.P., and Charles F. Martin are two of the executors of the will, and the residue of the estate is to be disposed of as the executors see fit within the next twenty years among the following institutions: The Montreal General Hospital, the Brewery Mission, the Salvation Army, and the Y. M. C. A.

FOREIGN.

The Journal of the Royal Army Medical Corps.—The first number of this journal, the official organ of the British military medical service, has just appeared. The first number contains interesting papers on hospital arrangements on transports, reports of surgical cases, and an account of the medical relief expedition to Martinique and St. Vincent last year. These, with other matters of interest especially selected for the class of readers whose patronage is expected, make a very creditable number. The journal is being issued monthly under the editorial management of Major R. H. Firth. Its appearance and general make up is excellent.

Hospital Training Required of German Students.—The medical students of the University of Berlin protest against the new regulation which requires that all who have not finished their course and taken their state examination before Oct. 1, 1903, will have to pass through the practical hospital year. This regulation affects those students who, during their studies, have exhausted their financial resources. There are many who have acted as assistants in the different departments, but this will not be credited to them as an equivalent. The students of Halle and Heidelberg have also protested to the chancellor of the empire against the new regulation.

The plague in Sydney reappeared June 20, only one case being reported, and no more occurring up to June 29. It is interesting to note that 115 rats infected with the plague had been found among those examined since March 12. A bounty of a sixpence a rat is now paid at Sydney. The destruction of rats has been continued ever since the epidemic that ended June 12, 1902, but with poor success in certain quarters of the city, where private parties failed to avail themselves of the means of extermination. Other cases of plague occurred May 24 and 25 in Brisbane and Perth, one each. A suspected case was isolated, June 25, in Auckland, N. Z.

Quacks in Germany.—Inquiry recently instituted as to the increase of quacks in German towns, brought out some interesting facts, though the replies to the inquiries were not as general and complete as was desired. In the province of Breslau, there were reported 228 quacks and 98 cases of malpractice, with 17 deaths at their hands; of these, 44 occurred in the town of Breslau, with two deaths. Of the 228 quacks, 141—113 men and 28 women—throve in the town of Breslau, and 70 who were not resident there treated Breslau patients, and visited occasionally. In the Rhine province, the inquiry brought out the result that from the 2,351 resident physicians in 539 communities, there were received 86 reports from 71 localities, which gave account of 288 quacks in 198 towns. Of these 288 quacks, 132 were reported from the province of Dusseldorf.

Smallpox in Tasmania appeared at Launceston in June, and a dozen or more cases occurred in that month. Rigid quarantine was established, the running schedules of steamships were modified and business interfered with. Houses and streets were put under guard, the general hospital closed, all outgoing mail fumigated and vaccination was general. New South Wales declared Tasmania an infected island, and took measures to keep smallpox out. The *Sydney Herald* remarks that there is perhaps no disease of which their people stand more in dread than smallpox. Australia has been free from it for many years. Partly because of supposed security by water isolation and partly because of trust in sanitary officers at the ports of entrance, vaccination has not been very general, and smallpox, it is thought, would deal severely with the people if an epidemic were once started.

Successful Mosquito Campaign at Suez.—According to a letter received by Major Ronald Ross from the secretary-general of the Canal Company of Suez at Paris, it appears that the measures taken by the local health authorities at Ismailia have almost completely eradicated the mosquito pest in that place. A permanent department has been created for oiling cisterns and pits, suppressing marshes and pools of water, and he thinks the number of cases of fever is very sensibly diminished in comparison with corresponding periods of former years. While the anopheles has not been completely exterminated, the recently-captured insects do not appear to be contaminated, while the culex mosquitoes, including, as Dr. Ross seems to think, the stegomyia, have almost disappeared. There is every reason to hope that the efforts will end in the complete extinction of malaria in the town of Ismailia.

Sanitary Problems in the Transvaal.—It is said that the South African medical authorities, especially in the Transvaal, are decidedly sluggish in sanitary matters, and the prospects of new outbreaks of plague are not just what might be desired. The local authorities seem to fail to appreciate the needs of sanitation, and in one case that is mentioned in the correspondence of the *British Medical Journal* they are directly interested in slum property and correspondingly opposed to measures that would tend to its sanitary amendment. The character of the obstinate persistency of the plague in Port Elizabeth has been alleged by the colonial secretary to be directly due to the opposition of the local authorities to the recommendations of the colonial health office.——A new rat-infested center has lately been discovered in Cape Colony, and it is possible that there may be a serious epidemic to follow. From the character of the population in the district the outlook in case such occurs is not hopeful.

Correspondence.

Reciprocity.

Burlington, Iowa, Aug. 1, 1903.

To the Editor:—About a year ago you did me the honor of publishing my views about "the one simple and practical way of getting reciprocity in the practice of medicine," namely: amendment to that effect in the medical laws of all the states. I see in the current issue of The Journal that Vermont and Oregon have just such amendments, and while I am not vain enough to suppose that my views above referred to were in any way responsible for such action, I am none the less pleased to see that other people are as little visionary about this matter as I am.

H. B. Young.

Surgical Treatment of Nephritis.

San Francisco, July 24, 1903.

To the Editor:—I notice in The Journal, July 4, an article by Dr. A. H. Ferguson on the above subject, in which he refers to my experimental work on decapsulation of the kidney (*Annals of Surgery*, April, 1903). I wish to call attention to two points in which he is in error in his criticism of my paper. He says:

> It must be observed that in these experiments the kidneys of the dogs were normal and did not require additional blood channels for physiologic purposes, and also the organs were returned within the fatty capsule, which is but sparsely supplied with blood vessels.

It is true that the kidneys were normal, but it is also true that in two experiments, Nos. 4 and 6, an additional supply of blood was demanded; in the first instance by the renal artery of one kidney after decapsulation of the other; in the second instance by removing one kidney and leaving the other undisturbed. In meeting the demand for increase of function made on both the normal kidney and the decapsulated kidney, the perirenal circulation played no part. It was fulfilled by the enlargement of the renal artery and vein in both instances. In the latter part of the sentence, quoted from the article of Dr. Ferguson, he objects to my not having removed the fatty capsule, "which is but sparsely supplied with blood vessels." In reply to this objection to the validity of these experiments I would state that, in the dog, the peritoneum is closely adherent to the greater part of the surface of the true capsule, that there is no fatty capsule, and that, therefore, it can not be removed.

Harold A. Johnson.

Vaselin as a Menstruum.

Oakland, Cal., July 29, 1903.

To the Editor:—In the discussion on the paper "Treatment of Scarlet Fever, Its Complications and Sequelæ," by Dr. H. M. McClanahan, July 4, Dr. G. A. Hermann refers to the method of preparing a 10 per cent. ointment of carbolic acid in vaselin, while the Doctor does not state that he uses this strength in the ointment. One would infer that he does, or why does he mention it at all?

I wish to emphasize the absolute pharmaceutic incompatibility of a 10 per cent. ointment of vaselin, a 5 per cent. or even a 3 per cent. ointment of this hydrocarbon, which is altogether devoid of oxygen; 2 per cent. carbolic acid is all it will take up; 3 per cent. can be made by mixing equal parts of carbolic acid and camphor and then adding the vaselin. Even a 2 per cent. must be most thoroughly macerated, and any fraction over this amount will cause the crystals to precipitate.

The tendency of carbolic acid crystals in any menstruum is always to coalesce, and this is the cause of the frequent carbolic acid burns we so often witness—not the 2 per cent., but the precipitated crystals in excess of this amount.

Highly oxidized oils, as lard or lanolin, will take up 25 percent. of carbolic acid or more; so will olive oil or cotton seed oil take up a considerable amount, but never petrolatum. The oxidized oils or fats are readily absorbed into the system. The non-oxidized or hydrocarbons never. Therefore govern your strength accordingly. I do not write this as a correction, but want to emphasize what the Doctor suggests and give a reason for it. Carbolated vaselin is a good external application in scarlatina, as it will, in a sense, prevent the absorption of the acid, but lard, lanolin and vaselin should never be considered under the same heading as a base for active poisons.

Again, the profession almost universally prescribe vaselin a proprietary article, the exclusive monopoly of one firm. If we would be more just to American manufacturing chemists, if we would be more technical in our scientific language, and more considerate of the price of prescriptions to our patients we would call it petrolatum.

M. Lewis Emerson, M.D.

Marriages.

W. T. McCarty, M.D., Bison, Okla., to Miss B. L. Folsom of Chicago.

Lawrence Newton Wheeler, M.D., Monrovia, Cal., to Miss Helen Grace French of Berkeley, Cal.

William B. Mantle, M.D., Albion, Iowa, to Miss Hattie Leah Sawyer of Mount Vernon, Iowa, July 15.

Arthur Tenney Holbrook, M.D., Milwaukee, Wis., to Miss Bertha Matson Andrews of Lombard, Ill., July 29.

G. E. Leavitt, M.D., Mason Valley, Nev., to Miss Mary Cecilia Johns of Georgetown, Cal., at Smith, Nev., July 1.

Deaths.

Louis D. Kastenbine, M.D. Bellevue Hospital Medical College, New York, whose reputation as a chemist was widespread, died from Bright's disease at his home in Louisville, Ky., July 29. He was born in Louisville, Jan. 1, 1839, and was educated in the public schools, graduating in 1858. While attending the high school he took a course in chemistry in the medical department of the University of Louisville, under Dr. James Lawrence Smith. He began the study of medicine at the University of Louisville in 1860, with Dr. Erasmus D. Force and A. B. Cook as his preceptors. When the Civil War broke out he attached himself to the Federal Army as an acting medical cadet, being assigned to the duty in Louisville at Military Hospital No. 4. After his graduation Dr. Kastenbine remained in New York some time, returning to Louisville and associated himself with Dr. E. D. Force. He was selected as the first demonstrator of anatomy of the Kentucky School of Medicine in 1865. Later he was made associate professor of chemistry in the University of Louisville. In 1878 he took the chair of chemistry and toxicology in the Louisville Medical College. A few years ago he resigned and accepted the chair of chemistry in the Louisville College of Pharmacy, in connection with which he became renowned as an analytical chemist. He was special examiner of drugs of the port of Louisville for the United States government.

Thomas Moore Rochester, M.D. University of Buffalo, 1878, of Brooklyn, for three years president of the staff of and later consulting surgeon and gynecologist for the Brooklyn Central Dispensary, attending surgeon to St. John's Hospital, special lecturer in physiology at the Long Island College Hospital, vice-president and for two years president of the King's County Medical Association, charter member of the New York State Medical Association, died from consumption, July 12, at the home of his mother in Rochester, N. Y., after an illness of three years, aged 48.

Edwin J. Miller, M.D. Jefferson Medical College, Philadelphia, 1896, of Intercourse, Pa., was thrown from his carriage in a runaway accident near Mount Airy, July 24, and sustained a fracture of the skull, from which he died two hours later, aged 35. He was a member of the Lancaster City and County Medical Society, the Pennsylvania State Medical Association and the American Medical Association.

John Phillips, M.D. Rush Medical College, Chicago, 1853, a member of the American Medical Association; for more than 50 years a resident of Stevens Point, Wis., who served both in the senate and assembly of his state, died at his home in Stevens Point, July 28, from heart disease following influenza, after an illness of several months, aged 79.

George W. Nash, M.D. Central College of Physicians and Surgeons, Indianapolis, 1888, a coroner of Marion County, Ind., from 1898 to 1900, died at his home in Indianapolis, July 26, from paralysis, aged 68.

Lawrence Stewart Edwards, M.D. Bellevue Hospital Medical College, New York, 1876, who served for two terms as coroner of Suffolk County, N. Y., died suddenly at his home in Patchogue, Long Island, July 25, from apoplexy, aged 48.

Clarence B. Le Van, M.D. Niagara University, Buffalo, 1888, died, July 26, at his residence in Buffalo, aged 39. He was a member of the Buffalo Academy of Medicine, Erie County Medical Society, and the Esculapian Club.

A. E. Rodgers, M.D. Medical College of Ohio, Cincinnati, steward at the Bonner Springs (Kan.) Sanitarium, was burned to death, July 16, while endeavoring to save the life of an aged and infirm patient, aged 33.

Charles A. Ring, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1872, professor of obstetrics in the Medical School of Maine, died at his home in Portland, July 8, after a long illness, aged 58.

Thomas C. Walton, M.D. University of Pennsylvania, Philadelphia, 1878, died at his home in Stroudsburg, Pa., July 10, from dropsy, after an illness of fifteen weeks, aged 49.

James Morgan Woodall, M.D. Vanderbilt University, Nashville, Tenn., 1889, died at his home in Estill Springs, Tenn., July 18, after an illness of two days, aged 36.

John Evans Walker, M.D. New York University, 1886, died at his home in Columbus, Ga., July 23, from cerebral hemorrhage, after an illness of only a few hours.

Edmund Brink, M.D. Berkshire Medical College, Pittsfield, Mass., 1856, died at his home in Saugerties, N. Y., July 21, after a prolonged period of ill health.

Arthur E. Graham, M.D. Vanderbilt University, Nashville, Tenn., 1885, died at his home in Handley, Texas, July 23, after a long-continued illness, aged 46.

Horace B. Van Norman, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1864, died at his home in Cleveland, July 9, after a short illness, aged 69.

James W. Blount, M.D. University of Pennsylvania, Philadelphia, 1845, died at his home in Kenansville, N. C., July 15, from heart disease, aged 80.

John M. Wilson, M.D. Medical College of Ohio, Cincinnati, 1851, died at his home in Williamstown, Ky., July 20, after a lingering illness, aged 71.

Abraham O. Scott, M.D. University of Pennsylvania, Philadelphia, 1853, died at his home in Fairfield, Pa., July 7, from senile debility, aged 78.

Pierre Foistall Choppin, M.D. Tulane University, New Orleans, 1884, of St. Patrick's, La., died at Covington, La., from la grippe, July 15.

I. C. Wait, M.D. Rush Medical College, Chicago, 1858, died suddenly from heart disease at his home in Juliaetta, Idaho, July 15, aged 70.

Charles A. Morin, M.D. Laval University, Quebec, 1890, died suddenly at his home in Thedford Mines, Que., July 24, aged 37.

Rachel H. Allyn, M.D. New England Female Medical College, Boston, formerly of Lowell, Mass., died at East Charleston, Vt., July 22, aged 93.

Boswell Ward, M.D. Rush Medical College, Chicago, 1860, of Indianapolis, died at Winona Lake, July 9, after a prolonged illness, aged 73.

Sardis B. Taylor, M.D. Starling Medical College, Columbus, Ohio, 1875, died suddenly at his home in Fremont, Ohio, July 15, aged 60.

Frederick William Payne, M.D. Harvard Medical School, Boston, 1866, died recently at his home near Boston, after a long illness.

Joseph J. Cox, M.D. Jefferson Medical College, Philadelphia, mayor of High Point, N. C., died at his home in that place July 19.

Walton H. Yager, M.D. University of Louisville, 1891, died at his home near Worthville, Ky., July 13, after a short illness.

A. V. Roberts, M.D. University of Pennsylvania, Philadelphia, 1848, died at his home in Mansfield, La., July 8, aged 78.

E. Barnes, M.D. University of Louisville, 1875, died at his home in Tulia, Texas, July 16, after a brief illness.

H. N. Sherrill, M.D., of Union City, Tenn., died at his home in that place from heart disease, July 18.

Book Notices.

The Autobiography of a Thief. Recorded by Hutchins Hapgood. Cloth. Pp. 349. Price, $1.25 net. New York: Fox, Duffield & Co. 1903.

This work purports to be a true statement of a reformed criminal, evidently edited by a more accomplished literary man, probably a newspaper man. It is an entertaining work in its way, giving certain views of low life from the standpoint of the criminal, and it does not create a very exalted impression of the police arrangements or the politics of the City of New York and other places. In fact, it bears out to a very large extent the allegations in Josiah Flint's work on the subject of the grafter in politics. The author, or rather the individual whose autobiography is here given, claims to be reformed, and his editor seems to have faith in his reformation. It is evidently not based on a moral conviction of sin, but rather on a utilitarian realization of the unprofitableness of crime as a means of support. The individual evidently has had considerable experience since he has had three state prison sentences and wound up in an asylum for the criminal insane, to which last place he gives a decidedly bad name. This is a little ungrateful since it seems to have been the principal means of his reform in breaking off the opium habit, etc. It is highly probable that his mental condition was such as thoroughly justified detention in such an institution, and he brings away the impressions based on his disordered mentality at the time. On the whole the work is a contribution to the sociologic literature of the day which has a certain tendency toward this kind of realism. We do not see any very great moral lesson to be derived from it, yet it is not directly bad in its tendencies, like the biographies of the James brothers and of other noted criminals that have so large and injurious a circulation. It is well to know something about the defects of the social organization and about the parasites that live on it. The subject of the autobiography evidently has a keen sense of humor and has done considerable reading in his prison detentions with the facilities there afforded. He does not, however, give us a high idea of discipline in our penal institutions. The book is suggestive of many reforms, and it may serve a useful purpose in this way.

Handbook of Climatology. By Dr. Julius Hann, Professor of Cosmical Physics in the University of Vienna. Part I—General Climatology. Translated, with the Author's Permission, from the Second Revised and Enlarged German Edition, with Additional References and Notes, by Robert DeCourcy Ward, Assistant Professor of Climatology in Harvard University. Cloth. Pp. 437. Price, $3.00 net. New York: The Macmillan Company, 1903.

This work, which is the first or general volume of a still larger one in the original German, is a valuable addition to our literature, not exactly medical, but scientific. Climatology, however, has many important medical bearings, and its value to the medical man, therefore, ought not to be underrated. The editor has added very largely to the references with the author's consent and has brought the work generally up to date. In fact, while the original work, as we take it, must have been much like the usual German works, deficient in matters more particularly connected with this country, the present volume is very complete in its American references and facts. It is, in fact, much better than the original, and the editor deserves the highest credit for this, though, as he modestly says, he has been careful to obtain Professor Hann's consent to every change that has been made. The work is not only full of information, but the information is in readable form. The remarks on mountain climate are full and complete, and only require a little common sense adaptation to have their value fully recognized from a medical point of view. The work contains a series of tables for the reduction of the metric and other scales to the ones originally used in this country as the metric system is used throughout in the text. The work should be a part of every physician's library.

Hygiene and Public Health. By Louis Parkes, M.D., D.P.H., Lond. Univ., Fellow of the Sanitary Institute, and Henry Kenwood, M.B., D.P.H., F.C.S., Fellow of the Sanitary Institute. With Illustrations. *Cloth. Pp. 763. Price*, $3.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

This is the second edition of a compendium of hygiene, of which the first was based on an earlier work which ran through some eight or ten editions. The fact that a second edition has been required within a year shows that the book is appreciated. It has been well brought up to date and gives in condensed form the principal points which the student and general practitioner may require.

Miscellany.

Collodium in Treatment of Carbuncle.—Dr. Hauffe of Eilenburg calls attention to the far more rapid healing of a carbuncle when the immediate environment is painted with collodium. The hairs must be carefully shaved off and the center of the lesion treated with sublimate or otherwise as needed. The layer of collodium protects the sound tissues and exerts a gentle pressure, both of which favor rapid repair.—*Allg. Med. Ct.-Ztg.*, lxxii, p. 317.

The fifty-fourth annual session has passed into history. Yes, and with a success and eclat far beyond the most optimistic views of its most sanguine adherents and admirers. From the golden slopes trending toward the Pacific, from Maine, all along the Canada borders, and from the shores of the great lakes, from the extreme Northwest and Southwest, from the great metropoli of the east, Boston, New York and Philadelphia, with swarms from the central and southern states, did come the mighty leaders of the profession with many humbler followers of the healing art, who hope with a commendable pride to be leaders some day, all imbued with one dominant idea—to help, aid and assist their suffering fellow man by adding to, or attaining new ideas, new views, new methods for the relief of suffering humanity. On Thursday morning, between the hours of 10 and 11, in reply to an inquiry, the very efficient and courteous Chairman of the Committee on Registration, Dr. Rudolph Matas, replied, "We have just summed up and find that exactly 2,000 have registered—and here is another," he interpolated, as a registration card, with its accompaniment of $5, was handed over our shoulder. To which we heard an enthusiast near by exclaim, "Johnny on the Spot." That the registration went beyond the 2,000 mark, there were other late comers, and those who had been too busy or negligent to register up to this time, as is always the case, is most gratifying indeed.

This session being held so close to the warm season, on the very edge of the country, in a city, it is true, of over 300,000, yet bounded on one side for many miles by a sparsely inhabited section of our country, as contrasted with other cities in which the Association had met, and on the other by the Gulf—we can but consider the attendance most remarkable, and as a strong and striking evidence that the method of organization is now on the right road.—*Southern Practitioner.*

State Boards of Registration.

Ohio Report.—Dr. Frank Winders, secretary of the Ohio State Board of Medical Registration and Examination, reports the examination held at Columbus, June 23 to 25, 1903, as follows: Number of subjects examined in, 9; total questions, 90; percentage required to pass, 75; written examination; total number examined, 91; number passed, 83; number failed, 8.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
170	R.	Ohio Medical University, Columbus.	1903	92 4-9
171	R.	Ohio Medical University, Columbus.	1903	88 2-9
173	R.	Ohio Medical University, Columbus.	1903	88
174	R.	Ohio Medical University, Columbus.	1903	89 6-9
175	R.	Ohio Medical University, Columbus.	1903	77 8-9
211	R.	Ohio Medical University, Columbus.	1903	92 8-9
216	R.	Cleveland Univ. of Med. and Surgery	1897	75
192	H.	Cleveland Homeopathic Med. College	1903	80 4-9
193	H.	Cleveland Homeopathic Med. College	1903	76 3-9
221	H.	Cleveland Homeopathic Med. College	1903	84 2-9
238	H.	Cleveland Homeopathic Med. College	1903	81 2-9
239	H.	Cleveland Homeopathic Med. College	1903	90 3-9
189	R.	Cleveland Coll. of Phys. and Surgs.	....	91 4-9
236	R.	Cleveland Coll. of Phys. and Surgs.	....	89 2-9
178	R.	Northwestern University Women's Medical College, Chicago........	1895	83 3-9
184	R.	Northwestern University, Chicago..	1903	95 1-9
179	R.	Jefferson Med. College, Philadelphia	1900	84 4-9
188	R.	Jefferson Med. College, Philadelphia	1903	94 2-9
194	R.	Jefferson Med. College, Philadelphia	1903	95 6-9
195	R.	Jefferson Med. College, Philadelphia	1903	95 8-9
227	R.	Jefferson Med. College, Philadelphia	1903	87
180	R.	University and Bellevue Hospital Medical College, New York City..	1903	93 3-9
186	R.	Medical College of Ohio, Cincinnati.	1897	92
190	R.	Medical College of Ohio, Cincinnati.	1903	96 4-9
191	R.	Medical College of Ohio, Cincinnati.	1903	82 6-9
209	R.	Medical College of Ohio, Cincinnati.	1903	89 6-9
210	R.	Medical College of Ohio, Cincinnati.	1903	91 1-9
212	R.	Medical College of Ohio, Cincinnati.	1903	91 6-9
246	R.	Medical College of Ohio, Cincinnati.	1903	94 5-9
182	R.	Illinois Medical College, Chicago...	1902	84 8-9
183	R.	Columbian University Med. School, Washington, D. C...............	....	91
185	R.	Georgetown Univ., Washington, D. C.	1894	94 1-9
187	R.	Johns Hopkins Med. Schl., Baltimore	1903	94 1-9
196	E.	Eclectic Med. Institute, Cincinnati.	1903	89 2-9
197	R.	Starling Medical College, Columbus.	1903	84 3-9
199	R.	Starling Medical College, Columbus.	1903	94 3-9
213	R.	Starling Medical College, Columbus.	1903	84 3-9
214	R.	Starling Medical College, Columbus.	1903	89 5-9
215	R.	Starling Medical College, Columbus.	1903	89 6-9
219	R.	Starling Medical College, Columbus.	1903	86 8-9
237	R.	Starling Medical College, Columbus.	1903	85 2-9
198	R.	Rush Medical College, Chicago.....	1901	92 3-9
228	R.	Rush Medical College, Chicago.....	1903	94 2-9
229	R.	Rush Medical College, Chicago.....	1903	92 4-9
241	R.	Rush Medical College, Chicago.....	1901	85 3-9
200	R.	College of Phys. and Surgs., Chicago	1903	93 1-9
201	R.	College of Phys. and Surgs., Chicago	1903	87 6-9
203	R.	University of Michigan, Ann Arbor.	1903	93 5-9
204	R.	University of Michigan, Ann Arbor.	1903	92 3-9
205	R.	University of Michigan, Ann Arbor.	1903	92 5-9
240	R.	University of Michigan, Ann Arbor.	1901	96 1-9
206	H.	Univ. of Michigan, Hom. Med. Dept.	1903	92 8-9
207	R.	Univ. of Pennsylvania, Philadelphia	1903	91 3-9
244	R.	Univ. of Pennsylvania, Philadelphia	1899	98 3-9
267	R.	Univ. of Pennsylvania, Philadelphia	1903	91 5-9
224	R.	Miami Medical College, Cincinnati..	1903	96
247	R.	Miami Medical College, Cincinnati..	1903	91 1-9
266	R.	Miami Medical College, Cincinnati..	1903	93 7-9
218	H.	Chicago Homeopathic Med. College.	1903	88 4-9
220	R.	West. Penn. Med. College, Pittsburg	1903	91 7-9
222	R.	Detroit College of Medicine.......	1903	82 4-9
223	R.	Detroit College of Medicine.......	1903	81
225	R.	Detroit College of Medicine.......	1903	83 5-9
226	R.	Michigan College of Medicine and Surgery, Detroit	1903	89
230	R.	Baltimore Medical College.........	1903	82 6-9
233	R.	Baltimore Medical College.........	1902	97
243	R.	Baltimore Medical College.........	1903	93 5-9
231	R.	Western Reserve Univ., Cleveland..	1903	91
232	R.	Western Reserve Univ., Cleveland..	1903	91 7-9
234	R.	Western Reserve Univ., Cleveland..	1903	94 5-9
235	R.	Western Reserve Univ., Cleveland..	1903	85 7-9
242	R.	Medico-Chir. College, Philadelphia..	1903	96 4-9
245	R.	Women's Medical College of Pennsylvania, Philadelphia	1903	80 8-9
248	H.	Hahnemann Med. Coll., Philadelphia	1903	89
251	H.	Hahnemann Med. Coll., Philadelphia	1903	87
250	R.	University of Maryland, Baltimore.	1903	94 6-9
255	O.	Amer. Schl. of Osteo., Kirksville, Mo.	1903	84
256	O.	Amer. Schl. of Osteo., Kirksville, Mo.	1903	87 1-2
257	O.	Amer. Schl. of Osteo., Kirksville, Mo.	1903	90 3-4
259	O.	Amer. Schl. of Osteo., Kirksville, Mo.	1903	89 3-4
258	O.	Still Coll. of Osteo., Des Moines, Ia.	1903	90
260	O.	American College of Osteopathy, Medicine and Surgery, Chicago..	1902	82
261	O.	Southern School of Osteopathy, Franklin, Ky.	1903	91 3-4

FAILED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
172	R.	Columbus Med. College, Columbus, O.	1878	65 5-9
176	H.	Cleveland Univ. of Med. and Surgery	1894	63 1-9
177	H.	Homeo. Hosp. Med. Coll., Cleveland	1883	43
181	R.	Medical College of Ohio, Cincinnati	1879	68
202	R.	University of Naples, Naples, Italy.	1900	*
208	R.	Miami Medical College, Cincinnati..	1870	61 7-9
217	H.	Homeo. Med. Coll., Kansas City, Mo.	1889	†
232	R.	Kentucky School of Med., Louisville	1877	*

* Withdrew. † Dismissed from class.

Association News.

New Members.

New members for the month of July, 1903:

ALABAMA.

Williams, M. J., White Plains.

ARKANSAS.

Baker, Elwood, Dermott.
Grady, N. H., Monette.
Smith, Morgan, El Dorado.
Stephenson, C. C., Little Rock.

CALIFORNIA.

Hibbard, W. Edward, Pasadena.
Harris, Henry, San Francisco.
Voorsanger, Wm. C., San Francisco.
Clark, W. R. P., San Francisco.
Brady, G. T., San Francisco.

COLORADO.

Dyer, Harry Cheney, Segunda.
Beshoar, Ben. B., Trinidad.

CONNECTICUT.

Hazen, Robt., Thomaston.

FLORIDA.

MacDiarmid, John, DeLand.
Ryals, Chas. Howell, Dellwood.
McSwain, Daniel L., Arcadia.

GEORGIA.

Middlebrooks, James D., Powder Springs.
Barnett, Jas. Miller, Pretoria.

ILLINOIS.

Greenbaum, Edw. C., Chicago.
Lespinasse, Victor D., Chicago.
Dunn, Elizabeth Hopkins, Chicago.
Albright, J. L., Chicago.
Sage, Annie White, Chicago.
Brown, Josiah Scott, Chicago.
Hurlburt, S. R., Chicago.
Sonnenschein, Robert, Chicago.
Krout, Jacob B., Chicago.
Warner, Augustus S., Chicago.
Maclay, Otis Hardy, Chicago.
Baumann, Fred, Chicago.
Reichmann, Max, Chicago.
Quick, John Joseph, Chicago.
Kohn, Alfred D., Chicago.
Wolfe, Jos. G., Chicago.
Stillians, A. W., Chicago.
Nagel, John S., Chicago.
Bemis, Jos. G., Chicago.
Wylie, J. S. Matheson, Chicago.
Hunter, Mary P., Chicago.
Nelson, Engelbrecht, Chicago.
Doepp, William L., Chicago.
Bachelle, C. V., Chicago.
Abele, Ludwig H., Chicago.
Parks, Albert L., Leland.
Wernham, Jas. Ingersoll, Marengo.
Parker, Charles E., Sterling.
Mershon, G. E., Mt. Carroll.
Barbour, E. E., Magnolia.
Mitchell, James M., Pontiac.
Liesen, Anna M., Quincy.
Landauer, Seward L., Danville.
Rainwater, J. H., New Canton.
Carriel, H. B., Jacksonville.

INDIANA.

Glock, C. Marion, Coesse.
Yockey, D. H., Blountsville.
Fisher, Erastus Scott, Markle.
Schillinger, D. R., Richmond.
Sisson, E. R., Maxwell.
Ewing, U. B. G., Richmond.
Bartholomew, Alfred C., Logansport.

KANSAS.

McKay, W. T., Arkansas City.
Coffey, Hugh B., Pittsburg.
Powell, Lewis M., Topeka.
McCurdy, William C., Larned.
Kisecker, David Edgar, Caldwell.

KENTUCKY.

Taylor, Septimus Theodore, Bevier.
Smith, C. M., Dixon.

LOUISIANA.

Barnett, James Z., Bon Ami.
Simmons, Richard Oliver, Alexandria.
Clark, C. D., Mer Rouge.
Abshire, J. T., LeRoy.

MARYLAND.

Whaley, C. C., Baltimore.

MASSACHUSETTS.

McLaughlin, Henry V., Brookline.
Sullivan, Florence A., Haverhill.
Hannum, James W., Ludlow.
Roberts, Oscar S., Pittsfield.
Squier, Angelo O., Springfield.

MICHIGAN.

Dulitz, Paul C., Detroit.
Pedden, John, Petoskey.
Maddox, William H., Tecumseh.
Rigterink, John W., Freeport.

MISSISSIPPI.

Miller, John D., Brunswick.
Harris, William T., Rich.
Hayden, E. Forrest, Shaw.

MISSOURI.

Landaker, Chester L., Collins.
Craven, Y. D., Lawson.
Nulton, Ida M., Columbia.
McMichael, Austin, Rock Port.
Rothwell, Clarence A., Mexico.
Anderson, H. Claude, Kansas City.
Rohlfing, L. C., St. Louis.
Bradley, W. E., Ethel.
Shole, H. G., Paris.

NEBRASKA.

Tanner, Edward, Battle Creek.
Christensen, C. J., Hampton.
Wightman, William C., Wayne.

NEW HAMPSHIRE.

Berry, John J., Portsmouth.

NEW JERSEY.

Cossitt, Harry A., Morris Plains.

NEW YORK.

Daniels, John H., Buffalo.
Church, Thos. C., Valley Falls.
Nelson, Stuart W., Old Forge.
Goss, Alfred, Adams.
Satterlee, Albert R., Buffalo.
Weiss, George C., Mt. Vernon.

NORTH CAROLINA.

Johnson, Thos. Clarence, Tomahawk.
Anderson, Albert, Wilson.
Poole, C. M., Craven.

OHIO.

McClellan, James S., Bellaire.
Chamberlain, Robert C., Tiffin.
Johns, John, Martins Ferry.
Holland, Arthur B., Wellsville.
Beall, J. T., Coshocton.

OKLAHOMA TERRITORY.

Rosenberger, Francis E., Lawton.

PENNSYLVANIA.

McCormick, Louis P., Connellsville.
Douville, Jeffrey C., North East.
Heard, James Louis, North East.
Fogleman, A. P., Munhall.
Tracy, Stephen E., Philadelphia.

SOUTH CAROLINA.

Geiger, Chas. B., Manning.
Horlbeck, Henry, Columbia.

SOUTH DAKOTA.

Clemons, E. Jay, Aberdeen.

TENNESSEE.

Howlett, Kirby Smith, Franklin.
Goltman, M., Memphis.
Miller, J. Preston, Nashville.
McClain, Wm. Ashbury, Sweetwater.
Howell, J. J., Greenville.

TEXAS.

Dyer, J. O., Galveston.
Knolle, Otto J., Industry.
Perkey, Adrian Benton, El Paso.
Bennett, Thos. Joshua, Austin.
Johnson, Callerider L., Dallas.
Baldinger, Wm. H., Galveston.
Chambers, Rufus, Fort Worth.
Pettway, Thos. R., Austin.
Moore, John Hamilton, San Antonio.
Hogsett, Chas. Young, Dallas.
Wolf, W. M., San Antonio.
Rape, Wesley A., Victoria.

UTAH.

Freece, Margaret A., Salina.

WASHINGTON.

Gosnell, John C., Whatcom.
Harbough, Chas. C., Sedro Woolley.

WEST VIRGINIA.

McGuire, Thos. Jos., Parkersburg.
Rose, L. O., Hinton.
Dye, Victor Hugo, Sistersville.
O'Grady, Chas., Charleston.

WISCONSIN.

Edwards, Sherman, Oakfield.

Medical Organization.

Lavaca County (Texas) Medical Association.

This association held a meeting at Hallettsville, July 13. The next meeting will be held in Yoakum in August, when an effort will be made to organize the counties of Lavaca, De Witt and Gonzales into an organization.

Galveston County (Texas) Medical Society.

This society has been organized with quite a large membership. The following officers were elected: Dr. Charles W. Trueheart, president; Dr. Oscar C. Pabst, vice-president, and Dr. Joseph C. Ralston, secretary-treasurer, all of Galveston.

Leon County (Texas) Medical Association.

Physicians of Leon County met at Marquez, July 22, and organized a county association, with an initial membership of 19. Dr. Sam R. Burroughs, Buffalo, was elected president; Dr. William T. Evans, Jewett, vice-president, and Dr. J. H. Joyce, Buffalo, secretary and treasurer.

Yazoo County (Miss.) Medical Society.

Pursuant to a call from Dr. J. Augustus Crisler, councilor for the Fifth District, a number of physicians met at Yazoo City, July 23, and organized a county medical society. The following officers were elected: President, Dr. James P. Moore, Jr., Yazoo City; vice-president, Dr. John Darrington, Yazoo City; secretary and treasurer, Dr. John McCormick, Yazoo City.

Kaufman County (Texas) Medical Association.

This association met at Kaufman, July 14, and organized under the regulations of the state and National associations, with the following officers: Dr. William H. Monday, Terrell, president; Dr. Burrel J. Hubbard, Kaufman, vice-president; Dr. Willis J. Pollard, Kaufman, secretary, and Dr. Delana P. Hicks, Kaufman, treasurer. The next session will be held in Terrell October 13.

Moniteau County (Mo.) Medical Society.

At a regular meeting of the John McDowell (district) Medical Society, which has existed for twenty-five years, held at California, it was decided to disband. After adjournment *sine die*, twelve physicians of Moniteau County met and organized a county medical society, with Dr. John B. Stewart, Clarksburg, president; Dr. Philip Stephens, California, secretary, and Dr. Hugo C. Klueper, California, treasurer. The society will meet August 20 to perfect organization.

Wabasha County (Minn.) Medical Society.

At the thirty-fifth annual meeting, held in Elgin, July 9, it was voted to reorganize the society in conformity with the plan suggested by the American Medical Association. The following offices were elected: Dr. William T. Adams, Elgin, president; Dr. John C. Adams, Lake City, vice-president; Dr. William F. Wilson, Lake City, secretary; Dr. Emery H. Bayley, Lake City, treasurer; Drs. Joseph F. Bond, Wabasha, Jesse A. Slocumb, Plainview, and H. T. McGuigan, Millville, censors, and Dr. William F. Wilson, Lake City, delegate.

Travis County (Texas) Medical Society.

Pursuant to call from Dr. Thomas J. Bennett, Austin, councilor for the Seventh (Austin) District, 36 physicians of Travis County met at Austin, July 18, and organized a county medical society on the plan suggested by the American Medical Association and adopted by the Texas State Medical Association at its last meeting. The following officers were elected: Dr. Benjamin M. Worsham, Austin, president; Dr. Frank a Maxwell, Del Valle, vice-president; Dr. Matthew M. Smith, Austin, secretary-treasurer, and Drs. William T. Richmond, Manor, S. E. Hudson, Austin, and Thomas R. Pettway, Austin, censors.

Grant County (Wis.) Medical Society.

Of the 48 physicians of Grant County who had invitation to a dinner given by Lancaster physicians, July 23, 22 attended, and after dinner the Grant County Medical Society was organized. An informal meeting was held first, of which Dr. James Oettiker, Platteville, was made chairman, and Dr. John A. Gault, Lancaster, secretary. The following officers of the permanent organization were elected: President, Dr. Joseph Godfrey, Lancaster; vice-president, Dr. James Oettiker, Platteville; secretary and treasurer, Dr. Peter L. Scanlan, Lancaster; delegate, Dr. Jonathan C. Betz, Boscobel, and censors, Drs. James M. Lewis, Bloomington, John F. Metcalf, Fennimore, and Guerdon Buck, Platteville. The constitution and by-laws as suggested by the American Medical Association were adopted. The next meeting will be held at Lancaster September 10, when a literary program will be carried out. The place of meeting is to be decided at each meeting, but the time for meetings is the second Thursday of May, September and December of each year.

Societies.

Winnebago County (Iowa) Medical Society.—The annual meeting was held at Forest City, July 22. Dr. Harry R. Irish, Forest City, was elected president; Dr. Ferdinand A. Christensen, Lake Mills, vice-president; Dr. Luther Wall, Thompson, secretary, and Dr. Gissle M. Lee, Thompson, treasurer. The next meeting will be held at Buffalo Center.

Upper Peninsula (Mich.) Medical Society.—The ninth annual meeting was held at Sault Ste. Marie, July 15 and 16. The following officers were elected: Dr. Emil H. Webster, Sault Ste. Marie, president; Drs. Thomas M. Cunningham, Marquette, and C. Frithiof Larson, Crystal Falls, and Dr. S. Edwin Cruse, Iron Mountain, secretary and treasurer. The society will meet next year in Marquette.

Connecticut Members American Medical Association.—The second annual reunion will be held at Savin Rock, August 24. Members are requested to bring their families, and also any eligible candidate for membership in our organization. In order to facilitate the necessary arrangements for the dinner it will be desirable for all who propose to attend to send word before August 18 to the secretary, Dr. James M. Keniston, Middletown, Conn.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Minutes of the Thirteenth Annual Meeting, held at New Orleans, May 4, 1903.

(*Continued from page 330.*)

Revision of Constitution.

Dr. D. A. Thompson, Indianapolis, moved that the majority report be received and that the amendments as suggested be laid on the table. Seconded by Dr. P. Richard Taylor. Motion lost.

Dr. Randolph Winslow, Baltimore, moved that the proposed changes, if adopted, go into effect Jan. 1, 1906. Seconded by Dr. Geo. F. Jenkins.

Dr. A. R. Baker, Cleveland, offered as an amendment to this motion that the time be changed to July 1, 1905. The amendment was accepted by Dr. Winslow and his second and carried.

On motion of Dr. Walker the new Article III as amended by the committee preparing it, was taken up section by section before its final disposition.

Section 1 was read as amended.

Dr. Seneca Egbert, Philadelphia, amended this section by adding after the list of studies:

> That certificates from reputable instructors recognized by the superintendents to be hereinafter mentioned may be accepted in lieu of any part of this examination.

On motion of Dr. Walker the section was adopted as amended.

Sections 2, 3, and 4 were then read and adopted as read.

Section 5 was then read. Dr. P. Richard Taylor, Louisville, moved to amend this section as follows: "That at least twelve months shall intervene between the beginning of any course and the beginning of the preceding course" be stricken out. Seconded by Dr. W. A. Evans, Chicago. Motion was lost. (Nays, 21; yeas, 11.)

On motion Section 5 was adopted as originally read.

Section 6 was read.

Dr. Randolph Winslow, Baltimore, moved to strike out:

> Credit for full year of time may be given students holding the degree of A.B., B.S. or other equivalent from a reputable university or literary college.

Seconded by Dr. David Streett.

Dr. H. B. Ward, Lincoln, Neb., offered the following amendment to the amendment:

> To add to Section 6, "Provided such degree represents not less than 900 hours of definite premedical work in laboratory science."

Seconded. The amendment was lost. (Nays, 22; yeas, 9.)

Dr. J. M. Dodson, Chicago, offered the following amendment to this section:

> Credit may be given to the holder of a bachelor's degree from a reputable college or university for any work in the medical branches which he has successfully completed in his college course, and that is the full equivalent of corresponding work in the medical curriculum. Such student may be allowed to complete the course for the medical degree in not less than thirty-one (31) months, provided he completes the remainder of the medical curriculum in that time.

Seconded and carried.

On motion Section 6 was adopted as amended.

Section 7 was read and adopted as read.

On motion of Dr. Dodson Article III was adopted in its entirety.

The chair appointed the following nominating committee: Drs. Wm. J. Means, R. Winslow and T. J. Hawkins.

On motion, the Association adjourned until 8 p. m.

Evening Session.

The Association reassembled at 8 p. m., and was called to order by the president.

The report of the secretary-treasurer was called for and read, and, on motion of Dr. Wathen, was accepted as read.

Report of Judicial Council.

Dr. Wm. J. Means, chairman of the judicial council, reported as follows:

Mr. President, Members and Delegates of the Association of American Medical Colleges:

The report of the judicial council for the last year will necessarily be brief. Aside from the correspondence of the chairman and the disposition of applications for membership in the Association from a number of colleges, only one important matter came before the committee for adjustment.

Communications were received from a number of colleges of the Association and from other sources asking information on the eligibility of students to certain standing and for a construction of particular paragraphs of the constitution and by-laws. The chairman assumed the responsibility of replying to these communications without submission to the other members of the council. His opinion seemed to be satisfactory in every instance, therefore further submission of the inquiries was unnecessary.

There were a few complaints of irregularities against colleges of the Association, but inasmuch as they were not filed regularly they were not considered.

The year as a whole has been a very satisfactory one. Judging from the tenor of the communications from the officials of the different colleges, it is the opinion of the chairman that an honest effort is being made to comply with the rules of the Association and that commendable work is being done toward a higher standard in medical education

Entrance qualifications and time requirements are matters that come to the judicial council more than any others for adjudication. Fortunately for the Association a number of states by legal enactment have fixed the academic qualification for students and also the time requirements for a medical course. In a few of these states the right to examine applicants as to their literary qualifications for entering a medical college has been taken away from the college faculties and placed in the hands of examiners appointed by the state board. This is a step in the right direction. It will do more to raise the standard of preparatory education than anything else.

Through the efforts of the National Confederation of State Medical Examining Boards and the profession at large, every year adds other states to this list. With the present tendency it looks as though the day was not far distant when there will be uniform standards and reciprocity among the various states in the Union. Then the purpose of the College Association will be as it should be, purely educational, and the work of the judicial council perfunctory. Under the present conditions the Association is in an anomalous position. Owing to the low standard of entrance requirements and short terms, the diplomas of a large number of colleges, members of the Association, are not recognized in several states. It is, therefore, impossible for the medical colleges in these states to recognize the credentials of their fellow members. This condition of affairs should not obtain.

The charges preferred against the Milwaukee Medical College at the last session of the Association were taken up, and by mutual consent of the parties interested, Dr. R. O. Beard, secretary of the faculty of the University of Minnesota, was selected to make the examination. His expenses were paid by the accused college.

He made a thorough investigation and submitted the testimony in detail, and his finding thereon to the chairman of the judicial council. The testimony and Dr. Beard's report were submitted to Drs. Ritchie, Dodson, Griffith, Hawkins and Means. Dr. Welch, elected a member of the judicial council at the meeting in Saratoga, refused to serve. The proceedings were not sent to Dr. Keen of Philadelphia. The five members above mentioned, after examining the testimony, voted unanimously to sustain the findings of Dr. Beard. Said report is herewith submitted for your consideration.

REPORT OF SPECIALLY APPOINTED COMMISSION.—R. O. BEARD.

"The undersigned begs to report (1) that at the instance of your body he conducted at Milwaukee, Wis., on July 15, 16 and 17, 1902, an investigation into the charges preferred by the Milwaukee County Medical Society against the Milwaukee Medical College.

(2) That these charges were revised at the opening of the investigation; that by request of the preferrer the charge respecting the conduct of unwarrantable obstetrical demonstrations was withdrawn; that by the decision of your investigator, the charges covered by specifications 4 and 5, as originally stated, were ruled out, on the ground that they did not involve any issue pertinent to the rules of the Association, unless it could be shown that the Milwaukee Medical College was prejudiced educationally by its financial ownership and control; and that if it were so prejudiced educationally, that fact would in itself disqualify its membership in the Association without reference to its financial status.

The charges, as revised, by consent of both parties to the investigation, are as follows:

CHARGE I.

The Milwaukee Medical College does not require sufficient preliminary education of applicants, as a requirement for admission to its courses.

It admits students without preliminary training, thus violating the standard laid down by the statutes of the State of Wisconsin and the National Association of American Medical Colleges.

The institution gives credit so as to entitle students to advanced standing without presenting the necessary educational credentials for such credit.

CHARGE II.

The Milwaukee Medical College has violated the medical laws of this state in that it does not give the required courses of study as far as time devoted thereto is concerned.

The catalogue of the College advertises two or more courses of fourteen weeks each in one year, and states that credit is given for one year's work on completing two terms, thus enabling students to complete a course of four years in less than three.

The college advertises courses of lectures by professors who are not and were not connected with the institution, and did not give the lectures advertised.

The college allowed one man to fill four or five chairs, thus not having a complete faculty as advertised.

The Milwaukee Medical College during the past year has had no adequate course in anatomy.

The college is not giving the educational examinations on entrance to the course of study.

CHARGE III.

The Milwaukee Medical College has granted diplomas to persons unfit both from an educational and moral standpoint to practice medicine.

The college has granted diplomas to students who failed to pass the requisite examinations.

The Milwaukee Medical College allowed men to practice medicine before completing their course and receiving their diplomas.

(3) That exception was taken by the defendant college to the charges, on the score of their alleged non-specific character. Your investigator ruled in favor of the adequacy of the charges, provided they were specifically sustained by evidence.

That your representative ruled that evidence tending merely to show *infraction* of the laws of the state of Wisconsin was incompetent, since the rules of the Association are not coincident with or dependent on the statutes of *any state; that* such evidence could only possess a secondary value as corroborative of proof that the defendant was in violation of the Association rules.

That he further excluded all evidence tending simply to show personal bias or local prejudice in either party and required that evidence to be acceptable should deal only with questions of fact, or of professional opinion of the facts based on sufficient experience in the premises.

(4) That the following are his findings on the several charges, based, in his judgment, on the evidence submitted and the records of the Milwaukee Medical College:

(I) The charge that the Milwaukee Medical College has admitted students to its courses without the preliminary education required by the rules of the Association is sustained:

(A) In that the college has accepted inadequate credentials in proof of such education.

(B) In that it has admitted students unpossessed of such credentials without submitting them to the examination required by the rules of the Association.

The further charge that it has admitted students to advanced standing whose credentials did not entitle them to the same, is sustained.

(II) The charge that the Milwaukee Medical College has not required its students to fulfill the four years' course of study, each year to represent a period of not less than six months, no two of which periods shall be taken in the same year, is sustained by the evidence and by the published announcement of the college, 1901-02, page 16.

The charge that the college has advertised the employment of professors who were not connected with the institution is technically sustained, but is traceable to circumstances which the college could not at the time control.

The charge that the college allowed one man to fill several chairs at one time is sustained by the facts; this course being, however, in the judgment of your investigator, an unwise method of filling certain vacancies in the faculty for which the college was not initially responsible.

The charge that the college has had during the past year incomplete and deficient facilities for the study of anatomy is sustained, at least so far as a part of the year is concerned.

The charge that thorough or adequate examinations are not given by the college on entrance to a course of study, is sustained so far as entrance examinations are concerned, but rests on hearsay and contradictory evidence, and is not, in the judgment of your investigator, proven so far as its professional examinations are concerned.

(III) The charge that the Milwaukee Medical College has granted its diploma to persons notoriously unfit, both from an educational and moral standpoint, is sustained on the question of educational unfitness. There is no evidence to show that the college was aware of any moral unfitness in its graduates, although it does not appear to have concerned itself to ascertain their moral status.

The charge that the college has given its diploma to students who failed to pass the requisite examinations is sustained in the fact that it has permitted certain students to substitute for otherwise unremoved conditions, altogether inadequate courses of study. Its rating for the passing of students in all branches has been unfortunately low.

The charge that the college has allowed students to practice medicine before completing their course and receiving their diploma is not sustained since the college has the power neither to permit nor to prevent such illegal practice. It has undoubtedly permitted students to leave the college and abandon study before they had completed the course required by the rules of the Association, although the evidence shows that the college sought to correct this error during the last term of 1902 by its recalling its students.

Your investigator does not deem it any part of his duty in the premises to recommend any action on this report, either by the Association or its judicial council. Respectfully submitted,

[Signed.] R. O. Beard, M.D.

Minneapolis.

Note.—The evidence given at the investigation of the Milwaukee Medical College by the Wisconsin State Board of Medical Examiners was made by consent the basis of this investigation and the testimony therein given by each witness was read and substantiated or amended by him and used as a foundation for further examination. This previous evidence is therefore embodied in this report.

By personal request of Dr. W. H. Earles of the Milwaukee Medical College, affidavits are introduced in counteraction of evidence given regarding his attitude toward the Wisconsin Medical Practice Act, although such evidence is not regarded by your investigator as pertinent or relevant to this issue."

Application for membership was made by the College of Physicians and Surgeons at Kansas City, Kans. A thorough and impartial examination was made of the facilities of the college, its curriculum and requirements. The former were found quite limited, and judging from information derived from various sources, its requirements are below those of the Association. The council, therefore, recommended the rejection of the application.

Application for membership was made by the University of Missouri situated at Columbia, Mo. The council recommends recognition of the medical department of said university for the first and second years of a medical course, but inasmuch as the clinical facilities must necessarily be limited in a city of the size of Columbia, it is thought best to withhold recognition and membership for the third and fourth years until the college can demonstrate ample clinical facilities for these years.

Application for membership was made by the medical department of the University of Tennessee situated at Jackson. The council recommends that action be deferred until the college can be investigated, and that the investigation be referred to Dr. Means.

Application for membership was received from the Memphis Medical College, but was later withdrawn.

Application from the University of West Virginia at Morgantown for recognition and membership of the first two years of a medical course was received and the council advises that action be deferred until an investigation can be made. The matter was referred to Dr. Dodson for investigation.

Application of Bucknell University of Pennsylvania made at the last annual meeting, referred to Dr. Keen of Philadelphia, was withdrawn.

Application for membership was received from the Dallas Medical College, Dallas, Texas. The council advises that action be deferred until the next annual meeting, and that Dr. J. D. Griffith of Kansas City, Mo., be requested to investigate the college.

Application was received for membership from Wake Forest College, at Wake Forest, North Carolina. The council advises that action be deferred and that Dr. Winslow of Baltimore be requested to examine into the merits of the college.

An application for membership was received from the University of Mississippi located at Jackson. The council asks for further time to investigate the college, and has referred the application to Dr. Means.

This concludes the report of the judicial council. We thank the official members of the Association for their kindly assistance in the work brought before them.

[Signed.] W. J. Means, Chairman.
J. M. Dodson,
H. B. Ward,
R. Winslow,
T. H. Hawkins.

Dr. W. A. Evans, Chicago, moved that the report of the judicial council be accepted and that the Milwaukee Medical College be censured. Seconded by Dr. A. H. Levings. Carried.

Dr. W. H. Earles, dean of the Milwaukee Medical College, expressed his thanks on behalf of his college for the leniency of the Association.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Medicinal Treatment of Hyperchlorhydria.

A. A. Jones, in the *Internat. Med. Magazine*, states that in considering the treatment of hyperchlorhydria the following conditions must be corrected: 1. The excessive acidity. 2. Constipation. 3. The pain which comes on at the height of digestion. He states that in the majority of the cases of hyperchlorhydria the following powder gives prompt relief:

℞.	Cerii oxalatis	ʒi	4	
	Bismuthi subcarb.	ʒii	8	
	Magnes. carb. levis.	ʒiv	16	

M. Sig.: From one-quarter to a heaping teaspoonful stirred in a quarter of a glass of water, to be taken two hours after each meal.

If pain and constipation persist extra doses should be administered. He advises against the administration of alkalies before meals, unless there is co-existing atony. In his experience a combination of potassium bicarbonate, sodium bicarbonate, and sodium and potassium tartrate are very effectual in the treatment of hyperchlorhydria, especially when there is constipation present, accompanied by drowsiness and headache. These preparations may be combined in the following proportions:

R.	Potass. bicarb.	ʒii	8	
	Sodii bicarb.	ʒiv	16	
	Sod. et potass. tartratis	℥i	30	

M. Sig.: One even teaspoonful dissolved in water at 10 a. m., 4 p. m., and 9 p. m.

The alkaline and saline waters are of service, such as the Vichy and Carlsbad waters.

The bromids, given in 10-gr. (.60) doses after meals, diminish the secretion of the hydrochloric acid through their influence on the nervous system.

Locally silver nitrate produces the best effects, administered in the form of a douche or intragastric spray in the strength of 1 to 1,000. Chloretone is also mentioned by the author as of service in allaying the burning distress and pain, given in 5-gr. (.30) doses night and morning. As an adjuvant treatment, to relieve the pain, the following combination is recommended:

℞.	Cocainæ muriatis	gr. ss		03
	Acidi hydrocyanici dil.	gtt. v		30
	Aquæ laurocerosi	ʒss	2	

M. Sig.: At one dose, to be repeated if necessary to relieve the pain.

Ringworm.

In the treatment of ringworm appearing on the body, the following, according to *Merck's Archives*, is of service:

℞.	Naphthol (resublim.)	ʒss	2	
	Olei picis liquidæ	ʒss	2	
	Sulphuris	ʒi	4	
	Lanolini	ʒv	20	

M. Ft. unguentum. Sig.: Apply locally night and morning; or:

R.	Chrysarobin	gr. xl	2	65
	Ichthyol	ʒi	4	
	Acidi salicylici	gr. xv	1	
	Ol. petrolati	℥ss	15	
	Lanolini	℥i	30	

M Ft. unguentum. Sig.: Apply locally twice daily.

The iodin preparations are frequently employed to destroy the parasite. They may be combined as follows:

℞.	Iodi	ʒss	2	
	Potassii iodidi	gr. xv	1	
	Alcoholis	ʒii	8	
	Aquæ	℥ss	15	

M. Sig.: Apply locally twice daily by means of a brush.

J. Nevins Hyde recommends some of the simpler remedies as serviceable in the treatment of ringworm of the body:

℞.	Lac. sulphur.	ʒiiss	10	
	Spts. saponis viridis Tinct. lavendulæ, āā	ʒvi	24	
	Glycerini	ʒss	2	

M. Sig.: To be applied locally; or:

℞.	Iodi (pure)	℥i	30	
	Olei picis liq. (sp. gr. .853)	℥ss	15	

M. (These preparations should be mixed with care gradually.) Sig.: Apply locally; or:

℞.	Creosoti	m. xx	1	30
	Olei codini	ʒiii	12	
	Sulphuris precip.	ʒiii	12	
	Potassii bicarb.	ʒi	4	
	Adipis	℥i	30	

M. Sig.: To be used locally in obstinate cases of ringworm of the adult.

Night-sweats.

Ladisl, according to an abstract in *Amer. Med.*, considers gua-camphol the best remedy in checking night-sweats. It should be given in 3 to 5 gr. doses (.20-.30) and continued over a period of two weeks. This preparation is insoluble in an acid medium, but breaks up into guaiacol and camphoric acid when reaching an alkaline medium in the intestine.

Acute Articular Rheumatism.

The *N. Y. Med. Times* recommends the following outline of treatment in acute rheumatism:

℞.	Sodii iodidi	ʒii	8	
	Sodii salicylatis	ʒiii	12	
	Syr. sarsap. comp.	℥iii	90	

M. Sig.: One teaspoonful after each meal in water.

Locally the following:

℞.	Olei gaultheriæ	℥ss	15	
	Linimenti chloroformi	℥iss	45	

M. Ft. linimentum. Sig.: To be applied locally night and morning.

As a combined alkaline and salicylate mixture the following may be given, which is according to the formula of Whitla:

℞.	Sodii salicylatis	ʒiv	15	
	Potassii bicarb.	ʒv	20	
	Liq. morphinæ hydrochloridi (1 per cent.)	ʒi	4	
	Aquæ camphoræ q. s. ad	℥viii	240	

M. Sig.: One tablespoonful four times a day in one-half a glass of water.

Furuncles.

M. Cohn, in *Monat. Pract. Dermat.*, recommends the following combination as a very efficient local remedy in the treatment of boils:

℞.	Ichthargin	ʒi-iiss	4.-10	
	Aq. destil.	ʒi	4	
	Glycerini	ʒiiss	10	
	Ol. petrolati	℥i	30	
	Lani	℥iss	45	

M. Ft. unguentum. Sig.: Apply locally around the boil and over it.

The inflammation, according to the author, subsides in a short time, when the ointment may be replaced by a 1 per cent. ichthyol ointment.

To abort furuncles, pure carbolic acid introduced into the center of the inflamed area is of value. It may be applied in this way by simply dipping a sharp toothpick made of hard wood into the pure *solution*, and by rotating it and applying gentle pressure it will penetrate the skin without any pain, as the carbolic acid will act as a local anesthetic.

The following combination applied topically has been employed to abort furuncles:

℞.	Europhen	ʒi	4	
	Olei olivæ	ʒii	8	
	Lanolini Ol. petrolati, āā	ʒv	20	

M. Sig.: Apply locally and cover the area with sterilized gauze.

Sodium Cacodylate.

The following combinations containing sodium cacodylate are recommended by *Bul. Gen. de Ther.* Where it is necessary to prevent disturbance of the digestive tract the following may be administered hypodermically:

℞.	Sodii cacodylatis	gr. c	6	65
	Liq. acidi carbolici	gtt. x		65
	Aquæ destil.	℥iiss	105	

M. Sig.: Fifteen drops to be injected once or twice daily.

As a rectal injection the following solution may be employed:

℞.	Sodii cacodylatis	gr. iii-vi		20-.40
	Aquæ destil	℥vi	180	

M. Sig.: At one dose introduced per rectum and retained. Two injections may be given daily for six days, three daily for ten days. The remedy should be stopped then for three days and repeated as before.

In the treatment of skin diseases it is of value given internally in the pill form:

℞.	Sodii cacodylatis	gr. iss		09
	Extracti gentianæ	gr. i		06

M. Ft. pilula No. i. Sig.: One such three times a day after each meal: or in the form of a mixture as follows:

℞.	Sodii cacodylatis	ʒss	2	
	Spts. frumenti	ʒvss	22	
	Syr. simplicis	ʒiv	15	
	Ol. menth. pip.	gtt. ii		12
	Aquæ destil.	℥ii	60	

M. Sig.: One teaspoonful in water after each meal.

Summer Diarrheas in Children.

Leo Ratner, in *Merck's Archives*, states that the treatment of summer diarrheas, as of all gastrointestinal trouble, may be divided into hygienic, dietetic and medicinal. He quotes several formulæ, recommended by Winter, for the home modification of bottled milk. Beginning with a formula suited to an infant one week old this formula is changed to suit the age and needs of the infant until the ninth month.

As to the medicinal treatment, he recommends the usual employment of small doses of calomel as the initial medication followed by intestinal astringents. He is averse to the employment of toxic preparations such as resorcin and naphthalin as they tend to lower the vitality of the infant.

He favors the use of tannalbin and ichthalbin as follows:

℞.	*Tannalbin*	ʒii	8	
	Ichthalbin	ʒi	4	
	Pulv. cinnamomi	gr. vi		40

M. Ft. chart. No. xxiv. Sig.: One or two powders at one dose, according to the age, and repeated three to six times a day; *or:*

℞.	Tannalbin	ʒi	4	
	Bismuthi subnit.	ʒi	4	
	Magnesiæ (calcined)	ʒss	2	

M. Ft. chartulæ No. xii. Sig.: One powder every three hours; or:

℞.	Tannalbin	ʒii	8	
	Bismuthi subnit.	ʒii	8	
	Mist. cretæ	℥iii	90	

M. Sig.: Shake the bottle. One teaspoonful every three to six hours; or:

℞.	Tannalbin			
	Ichthalbin			
	Bismuthi subnit., āā	ʒi	4	
	Tinct. opii camph.	ʒiv	15	
	Syr. rubi ideai	℥i	30	
	Aquæ q. s. ad	℥iii	90	

M. Sig.: Shake. One teaspoonful every one or two hours; or:

℞.	Tannalbini	gr. xx	1	30
	Ichthalbini	gr. x		65
	Tinct. opii	m. ii		12
	Aquæ amyli	℥ii	60	

M. Sig.: Shake. At one dose per rectum. The author, as noted in the foregoing, uses opium in some of the combinations, which is, in his opinion, of great value, after thoroughly emptying the bowel, but he condemns its use before the putrid contents are removed.

Ointment of Adrenalin.

M. Mignon, in *Sem. Méd.*, recommends an ointment of adrenalin rather than the aqueous solution in relieving the congestion and swelling of the turbinated bodies. He employs the following combination for local application:

℞.	Adrenalin	gr. ss		03
	Olei geranii	gtt. iii		20
	Olei petrolati	ʒiii	12	
	Lanolini	ʒiv	15	

M. Ft. unguentum. Sig.: To be applied freely to the nares with an applicator.

Although this ointment is slower in its action than the 1:1000 aqueous solution, the effects last much longer. He recommends it in acute congestions of the nasal mucous membranes and to prevent secondary congestions after cauterizations.

Medicolegal.

Delirium Resulting from Illness.—The Court of Appeals of Kentucky holds, in Supreme Lodge Knights of Honor vs. Lapp's Administratrix, that where a person was suffering from violent pains in the head, which had continued for some time, and seemed to be wandering and distrait, there was at least ground for the conclusion that he was suffering from delirium resulting from illness. And there being no other reason shown for his committing suicide, it holds that the question of whether he committed it in delirium resulting from illness was properly left to the jury, under a benefit certificate which provided that the order would not pay the benefits of those members who committed suicide, whether sane or insane, except it be committed in a delirium resulting from illness, etc. It would be an extension of contract, the court holds, to say the word "illness" referred only to such a sickness as confined the insured in bed.

Asking About Views of Others—Cross-Examination.—The Supreme Judicial Court of Massachusetts holds, in the personal injury case of Root vs. the Boston Elevated Railway Company, that a medical witness was not called on to say what the views of other surgeons might be, or as an expert to determine whether medical men would not differ in opinion when asked about the effect on the health of the individual of certain physical conditions. It appearing that the party suing did not call as a witness a physician, who, previously to the trial, at her request, made an examination of her physical condition, and that the company then called him, the court says that it might be inferred that his testimony was not wholly favorable to her contention as to the extent of her injuries, and that it was proper to ask him on cross-examination as to how far he required from a patient a full disclosure of symptoms and history of the case. This, it says, would be necessary to furnish data on which to base an opinion. And it holds that it could not be said that the further question as to whether he disclosed the information thus obtained to other persons was outside the limits of a reasonable cross-examination.

Responsibility of Patient in Personal Injury Case.—The Supreme Court of Missouri, Division No. 2, says in the personal injury case of Elliott vs. Kansas City that the question with which it was confronted was whether a person who has been injured by the negligence of another and who employs a reputable physician to treat him for the injury, is responsible for the mistakes and errors of judgment of the physician, and also, if he is told by his physician that no futher treatment is necessary, is he responsible if he could have been benefited by medical treatment? In its answer it says that it seems, both on reason and authority, that when a person is injured by the negligence of another he is bound to use ordinary care to the end of his restoration or cure, and is not responsible for the mistakes of an attending physician, and when he acts in good faith under the direction of such physician any mistake of the latter in the treatment will not absolve the party whose negligence caused the injury from liability in damages therefor. And it holds that, while the party suing in this case was not entitled to recover damages for such conditions as were entirely due to her previous injury or disease, if any such state of facts existed, she was entitled to have considered by the jury, in estimating her damages, any injury that may have been caused by improper medical treatment.

Evidence and Award in Compound Fracture Malpractice Case.—The Supreme Court of Nebraska holds, on the appeal of Leisenring vs. La Croix, that, in an action against a physician and surgeon for alleged negligent treatment of a compound fracture of the bone, it is permissible to show by another surgeon what would be the proper treatment for a simple fracture, and that the treatment for a compound fracture would not be materially different. In such an action it is proper to submit evidence relating to the condition of the patient's health at the time the treatment began, and also the length of time he was treated by others after the physician sued ceased to attend him, the jury being cautioned to compensate him only for such injury and damage as may have been caused by reason of the negligence of the physician sued. Where there was evidence that under proper treatment the fractured bone should have united within six weeks, and that the patient was confined under the physician's treatment for a period of fourteen weeks, most of the time in great pain, it was proper to submit to the jury the question whether the pain and suffering was caused by the physician's negligence, and to authorize a recovery therefor. A verdict for $1,140 in such a case, where the compound fracture was of the tibia and fibula of the right leg about three inches above the ankle, is upheld, when corrected by a remission of an item of interest erroneously allowed between the date of the injury and that of the judgment.

Liability of Hospital Patient for Medical Treatment.—The Supreme Court of Michigan says, in the case of Crumrine vs. Austin, that the latter being ill, his physician advised his brother that he had better go to a hospital. At the suggestion of the patient or his broher, the physician had a conversation with some one at the hospital by telephone, and was told by him that it would cost $15 a week for a private ward, and that would include room, board, nursing, and medical attendance, and that he communicated this to the patient. On cross-examination, however, the physician qualified the above statement, made on his direct examination, by stating that he was told over the telephone that the price included the attendance of a house physician and nursing, and that nothing was said about an operation. Nothing in the testimony indicated that the nature of the illness was mentioned in the conversation by telephone. The patient was removed to the hospital, where he remained several weeks. He was operated on by the physician bringing this action, who was called by the house physician, and who rendered him daily service by dressing his wound for a time. When the house physician did so on one occasion, the patient objected, and expressed a preference that the physician suing should continue to dress his wound, and a willingness to pay extra if he would, and the physician suing performed that service thereafter. The patient paid the hospital the sum of $15 per week in advance, but was surprised to receive a bill from the physician suing of $200 for the operation, and a total of $167 for other attention. The physician testified that the price charged was reasonable, unless it be considered qualified by the statement that the charge in such cases depends on the ability to pay, and his conversation with the patient, from which it might be inferred that physicians "regulate their fees by the financial standing of their patients," and that "persons who have political jobs are made to pay for cases where doctors work for nothing," which the patient stated that the physician suing told him, and the physician denied. The case was left to the jury, and a verdict was found of $99 for the physician, who thereafter appealed. The Supreme Court says that the verdict indicated that the jury must have found that the contract was as claimed by the patient, namely, to include the cost of the operation in the price given of $15 per week. The physician who telephoned for him was his agent, and neither the hospital nor the physician suing was bound by any misapprehension on the part of the physician who telephoned, or misunderstanding growing out of his inaccurate report to the patient of the terms offered. We must conclude from the undisputed testimony that the attendance of a house surgeon only was offered, and that neither party spoke of an operation. There was nothing to indicate that the hospital authority who talked with the telephoning physician had any reason to suppose an operation was contemplated, and, if that physician had one in contemplation, it was not mentioned. He asked for the house surgeon, and it was reasonable to suppose he knew the duties of such an officer; also that his patient would be expected to enter the hospital subject to its rules, whatever they were, except as they might be modified or affected by the conversation. A by-law introduced showed that the house surgeon was not given charge of patients. The trial court could properly have said that the contract was not proved as claimed by the patient. He would then be liable for the reasonable value of the services rendered. The physician suing was injured by an instruction which permitted the jury to exclude the value of the operation and early attention from the sum allowed. On the other hand, the reasonable value of the services was a question for the jury.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

July 23.

1 The Shattuck Lecture Before the Massachusetts Medical Society, June 9, 1903: The Sources, Favoring Conditions and Prophylaxis of Malaria in Temperate Climates, with Special Reference to Massachusetts. Theobald Smith.
2 *Studies on the Action of Alcohol in Disease, Especially on the Circulation. Richard C. Cabot.

2. **Alcohol.**—Cabot studies the effects of alcohol in disease, taking special care to be unaffected by any prejudices he may have had in his method of study. He reviews the known facts of the effects of alcoholism on tissue change, digestion, absorption, diuresis, diaphoresis, respiration, circulation, blood pressure, etc. He notices also the tolerance of febrile patients for alcohol, and the psychic effects, both on the patient and the physician. He summarizes his conclusions in the following:

1. In 41 patients, mostly cases of typhoid fever, 1,105 measurements of the blood pressure were made before, during and after the administration of alcohol in therapeutic doses. Neither the maximum nor the minimum blood pressure showed any variations that could reasonably be referred to the action of the alcohol. So far as was determined by the methods and in the cases used in this research, the action of alcohol on the circulation was nil. 2. The same neutrality and apparent inertness of therapeutic doses of alcohol in relation to the temperature, pulse rate, respiration rate, appetite, sleep, delirium and secretions (renal and cutaneous) of 309 patients suffering from a great variety of diseases was the total impression derived from 2,160 observations in these cases. 3. These observations are not interpreted as proving that alcohol is useless or useful in disease. As a narcotic and vaso-dilator it may have an important place in therapeutics. 4. More important probably than any of the questions investigated so far is the problem of the effect of alcohol on the power of the sick man's blood to protect him against infection and other harmful influences. The studies of Abbott and of Mircoli have begun to clear a path in this direction, and we have a certain amount of evidence relative to a similar problem in the lower animals. But as the results of studies regarding the action of alcohol on animals or on healthy men can not be used as evidence of its action in sick men, there is a good field for experimental work in this direction along the lines of Ehrlich's newer methods.

American Medicine, Philadelphia.

July 25.

3 *Mycotic Enzymes. B. H. Buxton.
4 *Some Practical Considerations of the Tumefactions of the Climacteric Breast. Theodore A. McGraw.
5 *The Pathology of Latent Malarial Infection as Observed at Autopsy. Charles F. Craig.
6 *Fowler's Position in Abdominal Surgery. Van Buren Knott.
7 *The Diagnosis and Treatment of Inflammation of the Accessory Nasal Sinuses. Joseph S. Gibb.

3. **Mycotic Enzymes.**—Buxton's article elaborately details the physiologic action of ferments. He gives tables at the end of the bacteriologic species producing enzymes hydrating carbohydrates, and of the corresponding proteolytic enzymes digesting milk, gelatin, fibrin, etc.

4. **Tumors of the Breast.**—McGraw notices the different forms of breast tumors, and considers that many cases are not necessarily malignant. The benign swellings even in the climacteric period are much more common than is usually supposed. He

notices the different forms of milk cyst, the fibrous tumors, and the serous cysts. He identifies the latter largely by the use of the exploring needle, and would feel lost without the aid it gives. He notices, however, some diagnostic mistakes in his own experience. When the evacuation of the cyst contents does not cause an entire disappearance of the swelling but leaves behind a hardened lump, the pathologic condition may give considerable anxiety and trouble. He considers it then the proper time for an exploratory incision. He says in conclusion:

> No breast ought to be adjudged cancerous without the most thorough examination by all possible methods, but when the surgeon, using his best judgment after full investigation, has come to the conclusion that he has to deal with a tumor of dangerous tendencies he should then operate on it so thoroughly as to destroy if possible every secondary growth, whether in fascia or muscle, skin or gland. He should assume that the skin above it, the fascia and muscle below and all of the neighboring lymphatic vessels and glands are already infected and should make the operation wide enough and deep enough to take in all of the suspected territory.
>
> We can not as yet say that we can in this way cure all patients with the disease, nor even a majority of them, but we may truthfully claim to have had a success in a very large minority—which our predecessors in surgery never achieved.
>
> I have now many patients who are living without recurrences after three, five, and ten years, and feel justified therefore, in spite of many discouraging failures, in recommending the operation as the only treatment which as yet has shown a fair measure of success.
>
> Above all things, we should try to keep our patients out of the hands of the charlatans, who inflict on them indescribable tortures which in the very nature of things can not possibly be of service.

5.—See THE JOURNAL, July 11, p. 125.

6.—Ibid., Jan. 10, 1903, p. 118.

7. **Nasal Sinuses.**—Gibbs finds from his experience that in the acute form of nasal sinusitis, the ethmoid is most frequently involved, the next in frequency being the frontal. Acute sinusitis varies in intensity in great degree, and is usually unilateral, therefore the presence of a one-sided purulent discharge from the nose should excite suspicion. It is in the acute form that early recognition and prompt treatment are most important, and the object should be to obtain free drainage. It is usually a self-limiting process and if we keep the natural outlets free, it will greatly aid. In the use of vasoconstrictor drugs, we can do much to reduce the size of the cavernous tissue and keep open the various natural outlets. Some of the more severe cases may resist this plan, and may require a prompt and thorough evacuation of the pus contents. Of the chronic forms of sinusitis, the antral is most common, next, the frontal, and here a careful diagnosis is the first essential. He details the diagnostic points at length of the antral sinus inflammation. Transillumination is not infallible; amount of discharge and pain are only assistants to diagnosis. Failing to get at the diagnosis by other methods, we have a measure always to be left to the last, but which may combine both diagnostic and therapeutic values; that is, puncture of the antrum through the inferior meatus. The treatment is entirely surgical, but this puncture alone may, in many cases, be all that is required. He remarks, however, as to the use of more radical methods, especially that of Jensen, of opening through the canine fossa and making a flap of the nasal wall of the sinus, which is turned up and subsequently adjusted. Ethmoid sinusitis is noted also at some length. According to his personal experience the chief things in treatment are free drainage and thorough irrigation, and the operations of opening the sinus both by the open and closed method are described. Ethmoid sinusitis, if uncomplicated, is more amenable to treatment than either of the other varieties; but it is seldom altogether uncomplicated. The symptoms are much the same as those of the other types, only the obstruction and pain are usually more prominent and pronounced. There is a form of ethmoiditis occasionally met with, in which the inflammation is largely confined to the middle turbinate. It is a question whether it belongs to the type of disease under discussion, or is only a local expression of a constitutional condition, such as syphilis, tuberculosis, etc. The treatment consists simply in removing the hypertrophied turbinate by a cold wire snare, and treating antiseptically. Sphenoid sinusitis is the more difficult to treat, and requires more care in the operative management, on account of the important parts closely contiguous, but his remarks on this subject are comparatively brief.

Medical News, New York.

July 25.

8 Studies on the Action of Alcohol in Disease, Especially on the Circulation. Richard C. Cabot.
9 *Malignant Tumors of the Testis. William B. Coley.
10 *Alcoholism in Women. Agnes Sparks.
11 *Alcoholic Toxemia; Its Pathology and Treatment. Thomas D. Crothers.
12 Infant Feeding. A Science and Art. John F. Connors.
13 A Case of Panophthalmitis in Typhoid Fever. W. Whitehead Gilfillan.

9. **Malignant Tumors of the Testis.**—These, according to Coley, are much more likely to be sarcoma than carcinoma. They also, contrary to Butlin, are not infrequent in young adult life, between 20 and 30. As a cause, trauma plays a very prominent part. The diagnosis is not usually difficult, tuberculosis of the organ most closely simulating the condition. In sarcoma the tumor is of a uniform consistence, the reverse of which is the case in tuberculosis, the epididymis being harder than the testis proper. Coley does not agree with Kober as to the favorable outcome of these cases, but admits that most of those he has seen were not in the early stages where treatment might be expected to be most effective. The rapid course of the disease is somewhat notable, sarcoma being more early fatal here than in other parts, as a rule. The treatment, he holds, consists in the complete removal of the testis and cord as high up as the internal ring, as soon as the diagnosis is made. In addition, he would advise treatment with mixed toxin serums. The prognosis of teratoma is good, though recurrences and metastases do sometimes occur. He reports a number of cases illustrating the types.

10. **Alcoholism in Women.**—The danger of prescribing alcohol to women, and of secret drinking on their part, are noticed by Sparks, who reports a case. The risk, she says, of prescribing even beer, is large.

11. **Alcoholic Toxemia.**—Crothers notices the action of alcohol, and discusses the treatment of alcoholism. In delirium tremens, he believes in the early and complete cutting off of all stimulants, and the use of the absolute essentials—sharp purgation, and sweating. The best results follow the elimination by this double process. In addition, he speaks well of chloretone for the drug treatment. He has not noticed any cumulative action, and its hypnotic effect is rapid; nor does it seem to cause any disturbance of digestion, nor have any bad effect following its use. After-treatment should be salines and baths, the latter daily, together with bitter tonics. Arsenic is a valuable remedy, and also some preparations of phosphoric acid.

Medical Record, New York.

July 25.

14 *Some Cases Treated by the X-Ray. William James Morton.
15 *Congenital Laryngeal Stridor. James E. Newcomb.
16 *Perichondritis of the Larynx, with a Report of a Case. Emil Mayer.
17 Gouty Phlebitis. A. A. Getman and R. W. Amidon.
18 *Hybrid Malaria. J. Lindsay Porteous.
19 *Authority and Facts. J. R. Clemens.

14. **X-Ray Treatment.**—Morton gives the results of *x*-ray treatment in a variety of affections, including facial cancer, carbuncle, cheloid, acne, alopecia areata, sychosis, fibroid tumor, psoriasis and lupus. He has had good results in the latter affection from the use of a method with a lead shield arranged so as to expose one-half an inch of normal skin around the edges of the lupus, and treating with the *x*-ray three times a week until the sound skin presented an angry purplish red *x*-ray dermatitis, while the lupus itself began to appear swollen, angry, red, exuding serum, and elevated. Using the normal skin as a control and a guide, he has found that the lupus after stoppage of treatment at the stage mentioned, went on to a complete cure by itself; and the skin previously occupied with the disease is now natural. He now treats all cases of lupus with this plan of using the sound skin as a control, and finds it more successful than either milder or more excessive methods.

15. **Congenital Laryngeal Stridor.**—This condition Newcomb describes and states that it predominates in male babies, though

the reason for this is not given. He points out the diagnostic points and discusses the theories. He thinks it a temporary deformity, due to a change of relations between the throat muscles and those of the larynx with a possible added factor of nerve disturbance. It is furthered by a backward development and irritable weakness of the central breathing mechanism. There is in it a factor of developmental neurosis. On the basis of this theory, a general tonic treatment is all that is required.

16. **Perichondritis of the Larynx.**—The rarity of this condition in this country is noted by Mayer, especially as compared with continental Europe. He explains its pathology as first congestion, then inflammatory edema ending in ulceration and breaking down. Other views have been expressed, however, and the question as to whether the changes are specific is denied by the author. He discusses the authorities as to the germs present, and reports a case in conclusion, reviewing other cases of laryngeal stenosis that may be compared with his. He thinks that his own case is of interest on account of the early development of laryngeal symptoms, the enormous submucous infiltration both before and after tracheotomy, the success that followed dilatation, making intubation easy under anesthetics, and the consequent easy deglutition with the tube in place. He thinks that this is the first case thus successfully treated.

18. **Hybrid Malaria.**—Porteous describes a form of this disorder which has occurred in many cases in his region, in Yonkers, N. Y., which, for want of a better name, he designates as above. It may be defined as a remittent fever with or without rose spots, appearing at times solitary and at other times in groups, both on the abdomen and sides. The invasion is not so insidious as in typhoid nor so sudden as in malaria. There is no distinct chill, but a chilly sensation is felt. The bowels are usually constipated, abdomen slightly tympanitic, urine often high-colored and offensive, some drowsiness, relieved by exercise and purgation. In the second stage there is a rise of temperature to about 99½ in the morning and 100½ in the evening, with pain in back and limbs, gradually increasing. The temperature later rises to 102 in the morning and 104, and even more, in the evening; insomnia. Rose-colored spots generally appear about the fourth day. At times there is considerable tympanitis. Sometimes there is a muttering delirium resembling that of delirium tremens. The Widal test is negative in all cases. The duration is one to four weeks. The failure of the Widal test was against the diagnosis of typhoid, as was also the rapid onset, the absence of iliac pain or gurgling, the eruption coming early and disappearing gradually, and the sudden subsidence of the fever, and rapid recovery. Malaria can be distinguished from it by the absence of intermittent febrile conditions, by the rash and the absence of a regular chill. The most successful treatment of this hybrid malaria is large doses of Warburg's tincture. If the diarrhea is obstinate acetozone seems to overcome it.

19. **Authority and Facts.**—Clemens takes exceptions to three statements, which he says have acquired a certain authority: 1. That early albuminuria in cases of sore throat is suggestive of diphtheria as against scarlet fever; 2, that of the absolute constipation in acute intestinal obstruction; and 3, the alleged lowering of arterial tension by drugs in chronic renal headache cases. These assertions tend, he says, to a routine practice, which is distinctly dangerous.

New York Medical Journal.

July 25.

20 *Removal of the Internal Jugular Vein and Carotid Arteries in Order to Remove a Tumor in the Left Side of the Neck. Neil MacPhatter.
21 *The Irritability of the Facial Muscles: A Study of Its Physiological Causes and Clinical Significance. Charles L. Dana.
22 *The Correction of Deformity at the Hip, the Result of Disease; a Study of the Best Methods and Best Positions. Virgil P. Gibney.
23 *Retrodisplacements of the Uterus and Their Treatment. J. M. Baldy.
24 *Edema of the Glottis. J. C. Gittings, with notes by John H. Jopson.
25 Gastroptosis. Joseph N. Le Conte.
26 *The Fever of Dentition. Eugene R. Corson.
27 An Experience with the X-Ray in Kraurosis Vulvæ. G. H. Stover.

20. **Extensive Operation on the Neck.**—The title of McPhatter's article explains its contents, but he reports the case in detail together with the discussion of the anatomic conditions, and gives illustrations. The results were waited for with some anxiety on account of the extensive interference with the cerebral circulation, but, contrary to the fears, there were no bad effects whatever. The pulse, temperature and respiration were practically normal, and the wound healed by first intention. In a few days the patient was out of bed, and in two weeks was able to return home. She has since been in good health. The illustrations show the success of the operation.

21. **The Irritability of the Facial Muscles.**—Dana reviews the normal and pathologic facial reactions to irritants, and finds that the face has normally only one true reflex, the supraorbital described by McCarthy and confirmed by Sailer. There is another apparent reflex that is really only a part of this, and there is still another one found occasionally in children, namely, the nasomental. This latter has also been found in abnormal conditions, as Graves' disease, melancholia, paresis, cerebrospinal lues, progressive muscular atrophy, and paralysis agitans. There are a number of other abnormal reflexes that are enumerated, but he sums up what he has sought to show as follows:

1. A list of normal facial responses.
2. A list of responses found in pathological conditions.
3. A demonstration that most of these responses are direct or indirect muscular reactions, not myotatic, and not reflex.
4. That the only normal reflexes of the face are the supraorbital and frontoorbital.
5. The description of a new reflex rarely found in normal faces, the nasomental.
6. The occasional presence of a frontal skin reflex.
7. Some clinical observations as to the significance of the abnormal responses.

22. **The Correction of Hip-Joint Deformity.**—In cases of deformity of the hip following diseases, the forcible methods of restoration that have been advocated are discussed by Gibney, and he reports a case where bad results followed. When sinuses lead to the joint, no matter of how long standing, it is unsafe to use forcible correction. He rather favors the use of subcutaneous methods, though they have been condemned by many surgeons.

23. **Retrodisplacements of the Uterus.**—Baldy discusses the subject of retrouterine displacements, which, he holds, are secondary as a rule to other conditions, ovarian trouble, adhesions, etc. He thinks that in a little while many of the operations now in vogue, such as Alexander's operation, hysterorrhaphy and ventrosuspension, will be obsolete and intra-abdominal operations on the round ligaments will take their place.

24. **Edema of the Glottis.**—Gittings and Jopson report a case and discuss the literature. They give the following conclusions as a résumé of the data discussed, with a pretty full bibliography:

1. Simple edema of the larynx usually occurs in cachectic diseases, especially of the heart and kidneys. In these there may be no apparent exciting cause, and the inflammatory symptoms are conspicuous by their absence.

2. Inflammatory edema of the larynx results from contiguity to other inflamed structures; as a local complication of the acute infections of erysipelas, variola, measles, scarlatina, influenza, etc.; or as a result of severe gr [illegible] in simple acute laryngitis. Bacteriological [illegible] bably find that a streptococcus is the most f[illegible]

3. Traumatism to the laryngeal structures may result in edema, depending on the degree of "insult" to the tissues or to a possible predisposition.

4. Among rare causes of edema of the larynx are angeioneurotic disorders and the blood dyscrasiæ, such as scurvy, purpura, etc.

5. The diagnosis rests on the evidence of palpation and, if possible, visual examination, as well as on the signs of laryngeal obstruction. Membranous laryngitis can not always be at once excluded.

6. Prognosis is unfavorable in all cases occurring in the course of chronic cachectic diseases and in severe types of the acute infectious diseases. In no case can it be other than guardedly favorable.

7. Treatment [illegible] ds relief unless the obstruction is [illegible] absolutely demanded in extreme case [illegible] of medicated steam is always to b[illegible] external depletion by leeches may be tried; cold and heat should be used externally and internally—cold as a prophylactic and heat as a stimulant and absorbent. General stimulating and supportive measures are necessary in all cases.

With the occurrence of edema of the larynx the time of election for the use of antistreptococcic serum has probably passed. As the infection is usually a mixed one, serum therapy does not at the present time offer much prospect of relief, and its use must be empirical unless there is opportunity for bacteriological diagnosis from cover-glass preparations.

26. **Dentition.**—Corson criticises the recourse to the gum-lancet, holding that we should look elsewhere for the fever of dentition than in the mouth, and that it will be found, as a rule, in the digestive tract. Interference with the gums is, therefore, of secondary importance, if not absolutely harmful. A little use of calomel and castor oil is more often all that is required.

St. Louis Medical Review.

July 25.

28 *Pathologic Findings in a Case of Grip Peritonitis. Carl Fisch.

28. **Grip Peritonitis.**—Fisch reports the findings at the autopsy of a woman, aged 35, who died after an acute attack of grip, toward the close of which symptoms of peritonitis appeared. The conditions found were those of an acute purulent peritonitis, without any apparent point of origin, with an otherwise absolutely normal condition of the body, except a bronchitis, and the presence of a pure growth of Pfeiffer's bacilli in the inflammatory products and in the bronchi.

Cincinnati Lancet-Clinic.

July 25.

29 *Nitrous Oxid with Oxygen as an Anesthetic in Throat Work. II. Nitrous Oxid as a Preliminary to Ether Anesthetics. Samuel Iglauer.
30 Polypharmacy—The Evil of the Day. Charles P. King.
31 Surgery of the Prostate, Pancreas, Diaphragm, Spleen and Thyroid. (Continued.) B. Merrill Ricketts.

29. **Nitrous Oxid.**—The following conclusions are deduced by Iglauer from his studies and observations as regards the use of nitrous oxid in nose and throat work:

1. Nitrous oxid with oxygen (or air) is by far the safest and most agreeable of all anesthetics.
2. The anesthesia is sufficient for a majority of cases.
3. When necessary the anesthetic can be repeated, either immediately or after an interval of several days.
4. For prolonged operations in the throat the nitrous oxid ether sequence is indicated (Bennet and Casselberry).

He thinks the drug has a much wider field of usefulness than to be used merely in dental practice. He also notices the combined use of nitrous oxid and ether, and its advantages in rapid anesthesia, and comparative safety and convenience.

Annals of Surgery, Philadelphia.

July.

32 *Surgery of the Pancreas. Prof. von Mikulicz-Radecki.
33 *A Review of 303 Operations on the Stomach and First Portion of the Duodenum. William J. Mayo.
34 *An Improved Filigree for the Repair of Large Defects in the Abdominal Wall. Willard Bartlett.
35 *Three Successful [illegible] for Intestinal Perforation in Typhoid Fever. [illegible]
36 *The Surgical Feat[illegible] of the Intestine in Typhoid Fever in Children. [illegible] A. Elsberg.
37 *Dislocation of the Carpal Scaphoid. Leonard W. Ely.

32.—See abstract in The Journal, xl, p. 1524.

33.—Ibid., p. 1600.

34. **An Improved Filigree for Large Defects in the Abdominal Wall.**—Bartlett has devised a special form of wire filigree for strengthening extensive defects in the abdominal wall. He has observed that scars spread laterally, but not longitudinally to any great extent, and it seemed to him illogical to strengthen the scar with a great number of needless wires parallel to the axis of the incision, which could only stiffen the abdominal wall and prevent perfect mobility. His filigree, therefore, consists of a series of transverse extensions along a central axis or a row of long, narrow loops, extending each side. Experience teaches, he says, that it makes no difference whether the muscles and fascia be or be not completely drawn together as long as a suitable wire filigree extending sufficiently far out between healthy layers is promptly implanted and healed in. He gives the history of this method of using wire to strengthen the abdominal wall, and remarks that he has been able to observe his seven cases after operation for periods varying from two years down to eleven days, and has in no case had to remove the filigree or seen any disturbance that might be taken to indicate that such a contrivance might not rest indefinitely in its new bed. The logic of the operation is simple. No dependence is placed on preformed tissues. Faith is pinned on the new scar, which is prevented from stretching in extension by unyielding silver wires distributed through it in the proper directions. Of all the various forms of nettings that have been used, the simple one of flattened wire loops appeared to him as being the only one free from the evident disadvantages inherent to any sort of plate, as that is what a stiff filigree really is—one made up of wires which are of equal distance apart and running in both directions.

35. **Intestinal Perforation.**—The three successful cases out of the 13 operated on are reported by Harte. In one, perforation occurred during the middle of the disease, with the patient in good condition. It was immediately recognized and operation advised, but the patient's family's consent was not obtained immediately, necessitating a delay. The second was of the ambulatory character, coming on suddenly in a patient not much exhausted and presenting many of the characteristics of appendicitis with perforation. These are the most favorable cases for operation. The third case occurred when the vital energies were exhausted as the result of prolonged and exhausting disease, and shows that success can be obtained in some instances even then. The keynote in dealing with typhoid perforation is early recognition of the lesion, and to make an accurate diagnosis in the early stage, the medical assistant must be thoroughly conversant with the condition of the abdomen and be alert for the first symptom of muscular rigidity. Cases with hemorrhage are most perplexing, for they occur together. He thinks the ideal method would be for the surgeon to see all cases of typhoid fever day by day with the physician. Other signs are later in appearance and of less value. Shock is an important sign, but it takes time, and no time should be wasted. Immediate operation should be urged even in the presence of profound shock. He advises incision on the right side, starting with the cecum and appendix, examining the last three or four feet of the ileum, and as much of the colon as can be exposed. If no sign of peritoneal involvement is found, a mistake has been made in the diagnosis, and further operation should be discontinued. If signs of peritonitis are apparent and the cause not detected, a median incision should be made so that the entire length of the colon and the remaining small bowel can be carefully examined. Perforation can be easily hidden by lymph, therefore all portions of the bowel that are indurated or covered with lymph should be carefully examined. In 95 per cent. of cases a lateral incision will be most satisfactory. Of the 330 cases which he has analyzed, in 96 a median incision was made with a mortality of 78.12 per cent.; with the right lateral incision there were 123 cases, with a mortality of 68.37. In the other cases the site of the incision was not mentioned. The perforation should be closed with a silk suture in the direction that makes the least narrowing of the gut. No time should be wasted on attempts to cut or freshen the edge. The best stitch is the so-called mattress suture, as the running Lembert is likely to cut or tear out. Frequently the openings are multiple, and a careful examination should be made. Occasionally an opening may be too large for sewing up, and there are four procedures offered: 1. A plug of omentum may be fashioned and stitched against the perforation to form a patch; 2, resection of the bowel and an end-to-end anastomosis; 3, formation of an artificial anus, and 4, cutting off the damaged area or bowel from the general peritoneal cavity by carefully placing pieces of gauze between the folds of the bowel. Cleansing of the peritoneum and drainage are the most important procedures. The best results follow thorough flushings with salt solution, then with equal parts of salt solution and hydrogen peroxid, and finally with normal salt solution. This is best done by carrying a large tube down into the pelvis, and with vigorous flushing all foreign matter can be much more easily removed than by dry sponging. After the intestines are carefully replaced, a number of large gauze wicks are carried down to the bottom of the pelvis and the different parts of the abdomen between the coils to secure good free drainage. The abdominal wound should be left open, excepting when it is very large, when a couple of sutures at the upper angle can be introduced. It should have a liberal dressing of gauze over it, which is soon saturated, but should not be removed for three or four days, after which time it can be re-

moved by thoroughly saturating it with salt solution or hydrogen peroxid. The two important factors to be carefully considered in these cases are, he says, the early recognition of the lesion and dealing with it as rapidly as possible, and planning the operation so that not a moment is wasted, using the simplest technic, as every moment of delay will increase the mortality.

36. **Surgical Features of Typhoid in Children.**—See abstract in The Journal, xl, p. 1392.

37. **Dislocation of the Carpal Scaphoid.**—Ely reports a case of this rare injury, which he thinks may occur without recognition. In his case it was only recognized by the use of an anesthetic, when the muscles were completely relaxed. It may be sometimes responsible for some of the bad effects in so-called Colles' fracture.

Proceedings of the Philadelphia County Medical Society, Philadelphia.

June 30.

38 *Remarks on the Treatment of Paralysis Agitans (Parkinson's Disease). J. Madison Taylor.
39 *The Significance of Urinalysis in Pregnancy; with Special Reference to Eclampsia. Robert N. Willson.
40 A Case of Malignant Ovarian Cyst. Mordecai Price.
41 A Case of Dermoid Cyst. Ibid.

38. **Paralysis Agitans.**—The special feature of treatment recommended by Taylor in paralysis agitans is a series of carefully-directed movements, passive and active, by which contractures are overcome, the joints loosened up and flexibility compelled, and next, education in voluntary movements, almost solely of the extensors in the arms and flexors in the legs, not neglecting other muscles that are used. These must be instituted gradually on account of the sensitiveness of the tissues. As the practice is continued great soreness is manifest, much more than follows freeing of contractures of the cerebral and other forms of paralysis, on account of the breaking up of sclerosed tissues. The physician should himself outline the treatment and watch the progress, the most careful personal observation being needed. The movements are carried out, as all educated masseurs should know, while the patient is lying prone on the back and then on the face. The legs are raised and the knees pressed down to be held in full extension and finally rotated and pulled similarly to the treatment for sciatica. Much attention should be given the hands and feet. Weir Mitchell observed long ago that forced extension of the fingers and toes would overcome tremor for a few moments, though he has never used this fact therapeutically. After the limbs and extremities have been thoroughly treated and moved passively in the normal directions, the patient is seated on a level, preferably the floor, and the operator seizing the head, pushes it forward on the chest by gradual extensions and relaxations, increased day by day until the stiffened back muscles relax sufficiently to thrust the forehead almost to the knees. This causes much pain and subsequent temporary soreness. The trunk is rotated on itself until normal excursus is secured. Movements, passive and active, of the neck and upper torso and shoulders are of the greatest value, as here the scleroses are most manifest. The hardened tissues affect the adjacent and contained blood vessels and affect their caliber, impairing nutrition beyond. It has been Taylor's experience that in treating the neck stiffness of senility, when the structures become once loosened and elastic, the special sense organs, the eye and ear were notably improved, and the throat and voice showed improvement. The blood supply to the brain is increased with resulting mental improvement. He also emphasizes the value of dry cupping of the region of the erector spinæ muscles, thus affecting the spinal vasomotor centers governing the circulation in the cord. This procedure seems to improve the elasticity of the ligaments, etc. He also emphasizes the importance of giving careful attention to the structures about the loins and hips. To sum up, he says:

> The indications in Parkinson's disease are to overcome the growing apathy; to induce systematized return to normal activities; to use all gentle and yet forceful means to secure elasticity to the tissues, and finally to stimulate the circulation in the spinal cord by graduated pressure on the spinal areas through which reflexly many of the fibers in the cord can be restored to function and others improved. Above all, care and patience and persistence must be forthcoming on the part of the physician, and intelligent coöperation demanded in the patient. Whether a cure can ever be attained is only to be learned by increasing experience, but the profound improvement obtained in some exceedingly severe cases warrants the hope, and expectation, if moderate, can be at times exceeded. In so hopeless a condition these rational measures are certainly well worth a fair trial, and in the earlier stages of the disease they promise to secure abundant rewards.

39. **Urinalysis in Pregnancy.**—In answer to the question whether eclampsia can be foreseen and prevented, Willson offers the following as reasonable conclusions:

> 1. Careful urinalyses should be carried out in all cases of pregnancy at frequent intervals and with increased frequency as term is approached. 2. The most dependable indications of impaired renal function and of probable eclampsia, have been shown by general experience to be the presence of decided quantities of serum albumin, the diminution of the eliminated urea and the presence of a microscopic renal sediment (casts, renal epithelium, blood, etc.). The character of the latter, when accompanied by the well-known clinical signs of nephritis, always constitutes a working basis for an estimate of the probability of imminent danger. 3. Even if the urine appear perfectly normal the possibility of eclampsia must be considered, especially in young women. Eclampsia in such cases is of equal severity with that of cases in which the urine has given due warning of impaired renal functions. 4. When eclampsia supervenes on labor in a subject with previously (apparently) healthy kidneys, the tendency subsequently is toward a return to normal renal functions if the patient survives. This circumstance would seem to indicate still more strongly that the kidneys may actually have been normal up to the time of a temporary embarrassment and suspension of function. 5. Although we fail to find in urinalysis an unerring indication of the behavior of the case, it is a safeguard we can ill afford to neglect. Until the nature and pathogenesis of uremia and eclampsia are more thoroughly understood it would appear to be our best guide to safe treatment and accurate prognosis. 6. The prognosis seems to be vastly improved if eclampsia be combated by generous bleeding, followed by venous transfusion with normal salt solution. These measures reduce and dilute the poison in the circulation and relieve the cardiac distress. Free diaphoresis and purging are, of course, indicated.

New York State Journal of Medicine, New York.

July.

42 *Some Reflections Relative to the Time and Method of Operating for Appendicitis. E. D. Ferguson.
43 The Family Physician. Chauncey P. Biggs.
44 *Morphology of Anopheles Mosquito—Habits—Modes of Destruction. Wm. N. Berkeley.
45 *The Concurrence of the Anopheles Mosquito and Malaria. Henry C. Weeks.
46 *Laboratory Diagnosis and Life Cycle of the Parasite of Malaria. Wm. T. Klein.
47 Results in Fifty Cases of Cancer Treated with the Aid of the Roentgen Rays. Charles W. Allen.
48 The Roentgen Ray; Its Mechanics; Physics, Physiology, and Pathology. Eden V. Delphey.
49 The Roentgen Ray in Gynecology. Eden V. Delphey.
50 *A Study of the Indications for Nephropexy. Augustin H. Goelet.
51 *Septicemia and Death Following X-Ray Burns. Howard B. Besemer.

42. **Appendicitis.**—Ferguson would operate in all cases on patients who will submit within a few hours of the attack, but after that somewhat vague period has elapsed and the disease becomes localized, he would wait for the subsidence of symptoms and the formation of an abscess, treating the patient medicinally so as to avoid any spreading of septic matter into the abdominal cavity or interfering with the protective adhesion of the contiguous peritoneal surfaces. All the cases, however, should ultimately be subjected to operation.

44.—See abstract in The Journal of July 11, p. 125.

45.—Ibid.

46.—Ibid.

50.—Ibid., xxxix, p. 1204.

51. **Fatal X-Ray Burns.**—Besemer reports in detail a case of fatal septicemia following an *x*-ray burn. He says he finds three hypotheses for its cause: 1. Sepsis due to septic infection of the wound at operation, followed by absorption. He hopes this was not the case. 2. Did the chlorin sterilization practiced destroy enough epidermis or rather put enough tissues into condition of good culture medium for streptococci to multiply beyond all reason and overwhelm the system, or 3, was it the severe *x*-ray burning that furnished the culture medium? He has never seen chlorin do this before. If it was the cause, he was not able to show how the condition occurred. Inasmuch as the diagnosis of sepsis was only established at postmortem he is unable to guess when it began.

Oklahoma Medical News-Journal, Oklahoma City.

July.

52 The Mechanical Treatment of Hernia. J. R. Phelan.
53 *A Study of a Case of Dual Personality. S. Grover Burnett.

54 Impaired Digestion of Infants—Particularly Bottle-fed Babies. F. H. Monroe.

53. **Double Personality.**—The case reported by Burnett is an interesting one, evidently epileptic in its character. A peculiar feature of the case is that the subject was aware of his defect and managed to conduct business by taking careful notes in each state to which he could refer in the condition of amnesia that followed. He learned to think as two men, one taking up matters where the other left off, as recorded in his book. The case also has important medicolegal bearings, as he was decidedly dangerous in some conditions.

Pediatrics, New York.

July.

55 *Fresh Air in the Treatment of Children's Diseases. Robert W. Hastings.
56 *Four Deciduous Teeth Extracted by an Injury, Replaced and Retained in a Healthy Condition. Samuel E. Earp.
57 Mongolian Imbecility. C. R. Spicer.
58 *Marasmus. Philip F. Barbour.
59 Pott's Disease of the Spine in Children. Its Complications. James H. Tebbetts.
60 Foreign Bodies in the Intestines. L. T. Royster.

55. **Fresh Air in Children's Diseases.**—Hastings remarks on the necessity of fresh air, the difficulty of obtaining it, and the methods adopted in the Boston Floating Hospital.

56. **Teeth Replacement.**—Earp reports a case where four lower incisors were knocked out by an accident, with laceration of the gums and only slight attachment of tissue on the anterior surface. The injured parts and the mouth were treated with an antiseptic solution mainly of boric acid, the teeth replaced, and after firm pressure for five minutes were kept in place by a pledget of cotton saturated with the same solution. Sedatives were given to produce quiet and a liquid diet instituted. After a few weeks the teeth were firm and later became uniform and normal and healthy. He thinks nature will show a tendency to assist when there is ample vitality as in childhood, and that the preservation of the teeth in this instance prevented depression, which, during the four to six succeeding years—the child being only sixteen months old—would have changed the expression of the features. The cutting edges not being in apposition would have made mastication imperfect and impaired digestion. The successful re-establishment probably prevented a destruction of the germs of the permanent teeth and avoided deformity and malposition.

58. **Marasmus.**—This condition is much more common among the dispensary class than in private practice. It may occur in well-to-do children that have undergone severe and prolonged illness. The pathology is not uniform. The cause is often very obscure, and though there is no difficulty in recognizing the atrophied child it seems to be due to vice of absorption, as Rotch says. Barbour, acting on this theory, has been trying copper arsenite in the treatment, in small doses, the more insoluble salt of arsenic being employed for the local stimulating action on the cells and mucous membrane of the stomach. Its effects, however, are not confined to the gastric membrane. It is carried into the bowel and that which is absorbed is carried to the liver, where it is again eliminated in the bile. This circular process seems to be stimulating to the atrophied intestinal mucosa, renewing its activity and bettering the absorption and assimilation. He has administered it three times a day after feeding in 3/100 of a grain doses dissolved in water acidulated with hydrochloric acid. While his experience has not been large with this method, it seems to indicate its use. He thinks the administration of cod-liver oil would probably be contraindicated. He has more good from its use externally than internally. The prognosis, he thinks, should be guarded in any case; the chances of tuberculosis are to be considered.

Bulletin of the Johns Hopkins Hospital, Baltimore.

July.

61 On Obliteration of the Superior Vena Cava. William Osler.
62 *A New Method of Hemo-alkalimetry and a New Hemo-alkalimeter. Arthur Dare.
63 John Collins Warren. J. G. Mumford.
64 *The Etiology of Serofibrinous Pleurisy with Reference to Cytological Diagnosis. C. H. Bunting.
65 A Case of Peptic Ulcer in the Jejunum of a Dog Following Gastroenterostomy, with a Review of the Cases Reported in Man. S. H. Watts.
66 The Advantages of the Sims Posture in Cystoscopic Examinations. John A. Sampson.

62. **Hemo-Alkalimetry.**—The new instrument and method here described are dependent on spectroscopic examination of the blood and fading away of the absorption point of oxyhemoglobin with neutralization. The details are too elaborate for abstracting. Dare tabulates 75 cases of blood examinations, and the tables, he says, seem sufficiently interesting to merit a close study of the relation of alkalinity to physiologic and pathologic alterations of the blood. In enteric fever a marked decrease of alkalinity was the rule. In 23 cases where this diagnosis was made, the alkalinity was normal or below normal in 20. A decrease in alkalinity is also observed in tubercular disease with glandular involvement, while in tubercular meningitis or peritonitis the alkalinity shows an increase or falls late in the course of the affections. In gastric ulcer there is a fall in the alkalinity below the color index, while cancer shows an alkalinity above this. In malignant conditions generally the alkalinity was found to be normal or somewhat increased. The anemias showed a decided fall in alkalinity, while in chlorotic subjects the alkalinity followed closely the normal color index. In the latter disease attempts were made to increase the alkalinity by giving excessive amounts of sodium bicarbonate, but while the erythrocytes increased and the urine became alkaline, the hemoglobin failed to respond. In splenomedullary leukemia, the alkalinity suffers a marked decrease, while in splenic anemia and cholemia it shows an apparent rise. Catarrhal jaundice and amyloid liver both raise the alkalinity of the blood, and cholelithiasis showed an evident decrease. Croupous pneumonia, phthisis, influenza, rheumatic fever, rubeola, appendicitis, even in the presence of a frank leucocytosis, showed an increased alkalinity, while in malaria the results seemed contradictory. In chronic malaria it was subnormal, while in recent tertian malaria it was increased. The relation that the alkalinity bears to the excretion of urea needs investigation. These studies, imperfect as they are, he says, tend to show that in those diseases which present a marked decrease in the alkalinity, they at the same time show a marked increase in the quantity of urea eliminated as the amount of nitrogenous food is diminished.

64. **Pleurisy.**—Bunting has followed Widal and Ravaut's suggestion as regards the cytologic determination of the tuberculous nature of pleurisy. He studied a number of pleural exudates, particularly those from idiopathic pleurisy at the Johns Hopkins Hospital. He finds a decided fall in the number of polymorphonuclears in the second week, the exudate being almost entirely mononuclear, agreeing in this with Widal and Ravaut as regards idiopathic pleurisies and their tubercular character. He does not pretend to claim that all idiopathic pleurisies are tubercular, but they have an exudate remarkably uniform in cellular content and general characters which may be assumed to indicate a uniformity in the nature and etiology of the process. This uniform cellular formula, as others seem to have shown, is the formula of tuberculous pleurisy.

Medical Bulletin, Philadelphia.

July.

67 Congenital Dislocation of the Hip-joint, Infantile Paralysis of the Lower Extremity, and Tuberculous Hip-joint Disease. James P. Mann.
68 *The Prostatic Electrolyzer in Its Time- and Trouble-saving and Curative Aspects. John V. Shoemaker.
69 *Hope in Medicine. F. Savary Pearce.
70 Improved Diuretics. William R. D. Blackwood.

68. **The Prostatic Electrolyzer.**—Shoemaker describes the method of using this instrument which is simple and has been described elsewhere. He finds with galvanic electricity it is of decided value in cases of enlarged prostate, spermatorrhea, constipation, etc., and reports cases.

69. **Hope in Medicine.**—Pearce maintains that the encouragement of hope is of main importance in many cases.

Annals of Gynecology and Pediatry, Boston.

July.

71 *A Report of 100 Cases of Diphtheria of the Larynx, Intubated, and Treated with the Diphtheria Antitoxin. Edwin Rosenthal.

72 *Two Cases of Normal Pregnancy Following Operations for Extrauterine Pregnancy. Francis D. Donoghue.
73 *Some Curiosities of Cesarean Section. Ernest B. Young.

71. **Diphtheria.**—Rosenthal has not been able to reduce his mortality record to so low a percentage as to make him a believer in the "possible specific efficacy" of the serum. He suggests or intimates that there may be a decided difference in the quality of the serum, and that it is sometimes less effective in the same quantity as formerly, though he admits the reduction of mortality that has followed its use in the severer types. He now combines the serum with his old treatment. No case is so mild or treatment begun so early as to induce him to depend alone on antitoxin.

72. **Ectopic Pregnancy.**—Donoghue concludes that it would be well to carefully watch the post-operative course of ectopic pregnancy, as an increasing number of reported results show that normal pregnancy is many more times apt to occur than a repetition of an extrauterine. He thinks we would probably be doing right to conserve the pelvic organs, but careful watch should be kept for slight deviations from normal menstruation after operation. If the patient should elect not to be exposed to the danger of repeated extrauterine pregnancy, he asks will we not be obliged to concede that she may demand relief from any child-bearing?

73. **Cesarean Section.**—Young describes a number of curious cases taken from the literature of cesarean section performed in the crudest possible way, even by the patients themselves. Examples are given where goring by a cow was followed by the extraction of a dead or living child and the mother surviving, or both mother and child surviving. A case has been reported where a woman was cut in two by a cannon ball and a living child saved.

Providence Medical Journal.

July.

74 Recent Medical Progress with Special Reference to the Studies of Immunity. Frank T. Fulton.
75 Myopia and Its Relation to School Life. F. T. Rogers.
76 *Treatment of Fracture of the Neck of the Femur. Frank E Peckham.
77 The Causes and Prognosis of Sudden Blindness. George W. Van Benschoten.

76. **Fracture of the Neck of the Femur.**—Peckham reports two cases of fracture of the neck of the femur, one treated by a bone peg, the fragment being placed in apparently perfect apposition and union restored in each case, though in each case there was a short- [illegible] of the leg. He accounts for this by the [illegible] proper lines or angle of the head to the shaft of the femur, and shows how this ought to be preserved by placing the wounded limb in an abduction splint. While this idea was original with him, it was also brought out by Dr. Royal Whitman, simply operating on the leg so as to restore the angle which the neck should form with the shaft. This can only be accomplished by markedly abducting the leg, therefore the leg should be placed in a strongly abducted position and fixed in plaster in this angle. He also calls attention to the Ridlon method of using the Thomas hip splint in case of this fracture in the aged.

The Laryngoscope, St. Louis.

July.

78 *The Principles of Rhinologic Practice. Edwin Pynchon.
79 *The Pathology of Ethmoiditis Reconsidered. Edward Woakes.
80 *The Use and Abuse of the Eustachian Bougie. M. A. Goldstein.
81 *The Possibilities and Limitations of the Electrolytic Bougie in the Treatment of Chronic Catarrhal Otitis. Arthur B Duel.
82 Some Cases of Asthma Treated by Removal of the Middle Turbinate. T. W. Moore.

78. **The Principles of Rhinologic Practice.**—Pynchon offers the following conclusions from his review of the general principles of rhinologic work: "1. In the normal nose the nostrils should be of equal caliber and should jointly have a sufficient capacity to at all times supply the requirements of easy nasal respiration. 2. In the ideal nose the walls of the septum are practically plane, and are at no time or place touched by the tissues of the outer wall in either passage, and, furthermore, no points of contact exist elsewhere therein, so as to interfere with either ventilation or drainage, or prevent the normal evaporation of nasal moisture. 3. While in an ideal nose the septum is vertical and nearly plane, a moderate irregularity thereof will not impair the nasal respiratory functions, providing there are no points of contact or abrupt elevations therein, and the lumen at all points is sufficient. 4. Abnormal redness of the nasal mucous membrane is an unfailing sign of irritation, the cause of which is generally of a structural nature, and, therefore, amenable to surgical treatment. 5. The indications for operative interference depend on both the subjective and objective symptoms. A noticeable inadequacy of either nasal passage, the presence of excessive or retained secretions, or an abnormal redness of the mucous membrane at any point, are all evidences of abnormality, which, if coupled with inconvenience to the patient, invite corrective attention. 6. In the treatment of chronic hypertrophic nasal troubles, the indication is to remove all obstructive, redundant or pathologic tissues, and at all times the chief indication is to cause the defective nose to conform as nearly as practical to the contour and character of the ideal standard."

79. **Ethmoiditis.**—Woakes discusses the pathology of ethmoiditis, which he attributes to progressive fibrosis, and compares it to the conditions that occur in the kidney and possibly in the sclerosis of the nervous system and elsewhere.

80. **The Eustachian Bougie.**—Goldstein describes a method of using the eustachian bougie, which he considers a very valuable therapeutic measure in cases of obstruction or narrowing of the canal. It is often efficient when pneumomassage, catheterization and flation of the tympanic cavity have failed to produce good results. Its effect, he thinks, is mainly mechanical. As regards the electrical bougie he believes the addition of a mild galvanic current with its simple stimulating effect on the mucous membrane, nerves and muscles of the eustachian tube, enhances the value of the bougie, but as to its mechanical and electrolytic effects he expresses doubt. He thinks they may aggravate conditions. With the slightest cauterization or erosion of the surface, further narrowing of the tube of the lumen can not be prevented.

81. **The Electrolytic Bougie.**—Duel is an advocate of the electrolytic bougie. He gives the experience of a large number with whom he has corresponded in regard to it. The cases where he has found it of greatest value have been those in which he has used it only a few times at considerable intervals. Others' experience agrees with him. Even one passage has been sufficient. A small bougie, small current strength, considerable time and a great deal of patience are the best precepts to follow.

The Medical Times and Register, Philadelphia and Boston.

June.

83 Shock Produced by General Anesthesia with Relation to Disturbances of the Blood and Gastrointestinal Tract. Fenton B. Turck.
84 The Treatment of Rheumatism. J. T. Fotheringham.
85 The Modern Therapy of Septic Puerperal and Surgical Infections. Roswell Park.

Virginia Medical Semi-Monthly, Richmond.

July 10.

86 Infection of the Parotid Gland. W. A. Bryan.
87 Round-celled Sarcoma of the Prostate; Removal; Recovery. Granville MacGowan.
88 Puerperal [illegible]
89 A Few [illegible] Chas. A. Labenberg.
90 The Use [illegible] A. B. Greiner.
91 The Mi[illegible] Spiritual Kingdoms of Food. Ephraim Cutter.
92 Anesthesia and Anesthetics. Thomas Dowling.
93 Hygiene in Public Schools. J. D. Bennett.

July 24.

94 Some Remarks About Accessory Sinus Disease. Joseph A. White.
95 Injuries of the Eye and Their Complications. E. Oliver Belt.
96 Case of Fracture of Skull. Wade A. Atkinson.
97 The Physician and the Public in Relation to the Common Communicable Diseases. J. C. Irons.
98 Diagnosis of Renal Tuberculosis. John D. Thomas.
99 Arteritis in Typhoid Fever. W. T. Thayer.
100 Medical Expert Evidence. Fred J. Mayer.

American Practitioner and News, Louisville.

July 1.

101 Cheerfulness in the Sick-room. T. Atchinson Frazer.
102 Phlyctenular Keratitis. M. F. Coomes.

of some inflammatory process. He queries whether syphilis may not be incriminated in the etiology.

Berliner Klin. Wochenschrift.

Last indexed XL, page 1791.

80 (No. 22.) Operative Cure [illegible] Compression. J. Israel (Berlin [illegible] durch ein Chondro-Sarkom des VI [illegible] ellung.
81 Löwit's Corpuscles. P. Reckzeh.—Ueber die Löwit'schen Körperchen in den Lymphocytenkernen und bei der Myelämie.
82 *Treatment of Chronic Catarrh of Large Intestine. J. Boas.—Zur Behandlung chronischer Dickdarmcatarrhe.
83 Hat die Glykogen-Reaktion der Leukocyten Bedeutung für die Metschnikoff'sche Theorie. S. Kaminer.
84 Diagnosis of Kidney Functions. H. Senator (Berlin).—Die Diagnostik der Krankheiten und der Leistungsfähigkeit der Nieren. (Commenced in No. 21.)
85 (No. 23.) Relations Between Accidents and Neuropathology. P. Schuster.—Unfallheilkunde und Neuropathologie in ihren Wechselbeziehungen.
86 (No. 23.) *Physiologic and Pathologic Significance of Becquerel Rays. E. S. London (Berlin).—Zur Lehre von den Becquerelstrahlen und ihren phys.-path. Bedeutungen.
87 (No. 24.) Metabolism of Uric Acid and Indican in Gout. J. Grossmann (of Senator's clinic).—Zur Kenntniss des Harnsäurestoffwechsels und des Indicans bei Gichtkranken.
88 *Ueber die Behandlung der Prostata-Hypertrophie. L. Casper (Berlin).
89 *Zur Behandlung der Lungen-Tuberkulose. L. Danelius und T. Sommerfeld (Berlin). (Commenced in No. 23.)
90 (No. 25.) *Four Cases of Lysol Poisoning. K. Liepelt.—4 Falle von inn. Lysolvergiftungen.
91 *Cancer in Cold-blooded Animals. L. Pick and H. Poll.—Ueber einige bemerkenswerthe Tumorbildungen aus der Thierpathologie, insbes. über gutartige und krebsige Neubildungen bei Kaltblütern.
92 (No. 26.) Mutual Relations in Pathology. Laache (Christiania).—Ueber Wechselbeziehungen in der Pathologie. Address at Madrid Congress.
93 Influence of Ems Waters on Elimination of Uric Acid. W. Laqueur (Ems).—Einfluss der Emser Quellen auf die Harnsäureausscheidung des Menschen.
94 *New Method of Preparing Albuminous Foods. W. Weissbein.—Ueber ein neues Verfahren in der Herstellung von Nahrungsmitteln.
95 *Die Loslausche Lungenheilstätte. F. Aufrecht (Magdeburg).
96 Hay Fever. Dunbar (Hamburg).—See abstract on page 139.
97 *Tryptophan-Reaktion und Magen-Carcinom. K. Glaessner (Berlin).
98 (No. 27.) *The Case of Plague at Berlin. W. Dönitz.—Ueber die im Institut für Infektions-Krankheiten erfolgte Ansteckung mit Pest.
99 Ueber die Beziehungen zwischen cong. Coxa vara und cong. Femur-Defect. M. Reiner.

82. **Treatment of Intestinal Catarrh.**—Boas criticises von Aldor's communication on this subject, the principal points of which were given in The Journal of June 27, p. 1791. He thinks that the long tube may simply roll up in the rectum instead of entering the large intestine its entire length, also that injection of as much as three quarts of water may be a dangerous procedure in such conditions. He also wonders why the measure is equally effective in the opposite conditions of constipation and diarrhea, stimulating peristalsis in one case and inhibiting it in the other. He thinks the unmistakable benefit derived must be due to the high temperature of the injections, and this principle has been proclaimed for years by others. Boas places supreme reliance on dietetic measures as a means of curing chronic catarrh of the large intestine, but the "obstipation diet" must be kept up for months to years or recurrence is liable. Aldor, on the other hand, releases his patients from dietary restrictions as he mentions in a reply to Boas in a later number. The latter has established that fluid injected into the rectum with a short tube, the subject reclining, soon finds its way into the cecum and emerges if there is a fistula at this point, consequently a long tube is not needed to flush the bowel.

86. **Research with Radium Rays.**—London used for all his tests 30 mg. of radium bromid in a rubber and metal box with a mica cover. He found that radium rays are able to kill mice without direct contact. Twenty-one grown mice and 6 controls were placed in glass vessels, 3 or 4 in each, and the box of radium was laid on the cover of the vessels for one to three days. The controls were lively at the end of the fifth day, but the other animals were all dead by this time. The symptoms noticeable about the third day indicated depression of the cerebral nervous system at first, followed by arrest of the functions of the cerebrospinal system in four to nine hours. The most profound anatomic alterations were in the skin and cerebral cortex. He further refers to the fact that if a stick of sealing wax is rubbed with flannel, scraps of tissue paper will cling to it, but he found that if the wax were passed over the radium box after being rubbed the tissue paper was not attracted to it. On the human skin the rays induced a so-called "cold gangrene" in tests on himself and his assistant. The lesions were so peculiar and characteristic that they must be designated as dermatitis radiogenes. He also states that arterial blood became dark colored under the influence of the rays. In his tests on blind subjects he found that they perceived a visual sensation when the radium was applied to their eyes, but this occurred only in those subjects who still retained a certain perception of light. The blind who had never experienced the sensation of light afforded negative or contradictory results. Blind subjects still able to distinguish between light and darkness were able to see in outline dark objects held against the fluorescent screen lighted by the radium rays. Two lads blind from atrophy of the optic nerve were thus able to learn by the silhouettes all the letters of the Russian alphabet and make out entire words. He also states that he found certain persons who were able to tell—by the visual sensation experienced—when the radium was brought close to the back of their heads, but only when approached to a certain point. He suggests that this may possibly be the result of excitation of the visual center at this point by the rays. The visual impression is perceived from the radium rays even when the eyes are closed, bandaged and covered with three or four superposed hands. His concluding statement is to the effect that it is possible to examine articles through the microscope in a dark room with merely the light from a good screen under the influence of the radium rays. His research was conducted at the Institute for Experimental Medicine at Berlin.

88. **Treatment of Hypertrophied Prostate.**—Casper reviews his experience with 131 patients with enlarged prostates. Four out of 61 cases not operated on were cured; 38 improved; 8 not benefited; 4 grew worse and 7 died. He emphasizes the importance of slow and gradual evacuation of extreme distension of an insufficient bladder. The fluctuation in tension is the most serious factor in the development of cystitis, he believes. Caution is pre-eminently needed in the absence of cystitis. He never resorts to catheterization in such cases unless there is as much as 300 to 400 c.c. of residual urine with a capacity of 500 c.c. He determines the capacity by injecting sterile water followed by 100 to 200 c.c. of silver solution. Of the 51 cases of considerable residual urine 2 were cured; 34 materially improved; 8 not benefited; 4 grew worse and 3 died. The cases of what he calls "prostatismus" were more difficult to treat. He did not use the catheter but applied hot sitz baths, thermophore compresses, soothing or narcotic remedies. Only 2 out of 10 were cured in this category. The effects of prostatectomy through a sectio alta were very serious; 2 died, and although the 2 others recovered, their lives hung by a thread for a time. Threatening heart weakness was observed in all and he regards this operation as too severe for any but younger men with vigorous constitutions. He has had no experience with the perineal operation.

89. **New Inhalation Method of Treating Tuberculosis.**—Dr. R. Schneider when traveling in Australia was impressed by the benefit derived by the natives in pulmonary affections from the use of a decoction of eucalyptus leaves. A powder has been prepared on this basis and put on the market under the name of Sanosin. It contains the pulverized leaves and oil of the Australian *Eucalyptus citriodora maculata*, flowers of sulphur and charcoal. The powder is burned on an earthenware plate over a small alcohol lamp for twelve to twenty minutes in an ordinary sized room. Danelius has been experimenting with this remedy for six months in private and dispensary practice and has found that tuberculous subjects who remain for one to three hours or all night in a room impregnated with the fumes of the burned powder are very much benefited. The relief in respect to the cough, expectoration, night sweats and appetite is pronounced and has been permanent to date. The fumes do not affect well persons unfavorably and his experience has convinced him that for old chronic bronchial catarrh there is no other treatment able to afford

such services. None of his patients can be considered cured of their tuberculosis to date but all have been immeasurably relieved. The patients sleep so well afterward that one inquired whether the powder did not contain some narcotic.

90. **Lysol Poisoning.**—One of Liepelt's patients had taken 100 gm. an hour before reaching the physician, and another 50 gm. two hours before. Beside his 4 cases he has found 41 in the literature. Four died out of the 11 in which the poisoning was from external application, and 13 out of the 30 who had taken the lysol internally. Only 3 of the latter 13 fatal cases had been treated by rinsing out the stomach. All the patients who recovered had been treated by rinsing out the stomach and with this he saved also the 2 severe cases first mentioned. He used 22 to 25 quarts of water for the rinsing, continuing it until the escaping fluid no longer smelt of the drug, and supplementing it with large doses of camphor. Consciousness was not regained for four to twelve hours in these cases. In 10 of the fatal cases the lysol had been taken by mistake for some other medicine; in 3 with suicidal intent.

91. **Cancer on Cold-Blooded Animals.**—Pick remarks that malignant tumors, especially carcinomata, have been found on horses, hogs, sheep, cattle, dogs, cats, goats, rats and mice, but he believes that he is the first to publish in a medical journal cases of cancer on cold-blooded animals. He has found a cystoma testis with carcinomatous inclusions on a Japanese giant salamander (*Kryptobranchus japonicus*); a large medullary carcinoma involving the thyroid on the neck of a Brazilian turtle, and gives illustrations of adenomata found on salmon and trout by Miss Plehn and published in a fishery journal. The analogy between the histologic structure of these neoplasms on these cold-blooded creatures and those on man is striking. The localization also corresponds to that on man. He adds cuts of some ulcerative pseudo-tumors found in the stomach of a dog in which specimens of *Spiroptera sanguinolanta* were ensconced. Grassi has found that this round worm completes its life cycle in the cockroach. The latter eats the embryos in dogs' dejecta, and the dog then eats the cockroach. Pick thinks that the ulcerative processes in this case suggest a more intimate connection between intestinal parasites and the mucosa than has been heretofore recognized. His researches to discover malignant neoplasms on birds and fowls have hitherto been fruitless, and he is inclined to believe that the cases reported have been erroneously diagnosed and were in fact tuberculous processes.

94. **New Method of Preparing Albuminous Foods.**—This article refers to a process which allows the complete separation of starch from the albuminous substances. The latter can thus be used separately as a by-product and afford an inexpensive and easily digested food which is being put on the market in the form of flour, macaroni, etc., absolutely free from starch by the most searching tests.

95. **Suggestion for Improved Construction of Hospital Wards.**—Aufrecht has had the sanatorium at Loslau constructed according to his designs and regards the result as a distinct advance. His aim was to secure private rooms for the patients, perfect ventilation and the minimum of expense. This he accomplished by having a large ward partitioned off into a corridor down the center opening into small rooms each side, the partitions reaching only two-thirds of the height of the room. Each of the small rooms has a bed and window, but the ventilation is usually from end to end of the corridor down the center. He has found it perfect. For hospitals he suggests the construction of wards on the same principle, only in the shape of a semicircle with a wide corridor for the base. The partitions should extend from the outer wall part way toward the center, like the spokes of a wheel, thus forming a semicircle of small compartments with a bed against the wall on each side and a window in the middle. The attendant, seated in the semicircular open space, could see every bed in the ward while each two patients would have the privacy of a separate room. In case one of the inmates of a compartment is dying, the other one could be moved out if desired. The ventilation from end to end of the long corridor at the base of the semicircle would be ample to keep the air pure while the patients would not be exposed to any draft. The open semicircular space would also prove a convenient gathering hall for the inmates able to be up.

97. **Protein Chromogen Reaction with Gastric Cancer.**—Glaessner announces that if a scrap of cancer tissue be placed in normal gastric juice the albuminoids are decomposed and the tryptophan (proteino-chromogen) reaction is constant. This does not occur with non-cancerous tissue.

98. **The Case of Laboratory Plague at Berlin.**—In the discussion at the local medical society of Dönitz's report on this subject, Dr. Plehn remarked that his extensive experience in plague countries warranted him in the assertion that the danger of contagion of bubonic plague is very slight. The Europeans in India scarcely ever contract the disease notwithstanding their almost complete lack of care. He thinks there need be no fear of the spread of the plague into an epidemic from isolated cases in Europe. He added that he had never witnessed any conclusive results from serum treatment or prophylaxis. In editorial comment the *Wochenschrift* urges that persons engaged in such laboratory work should be ordered to report daily that their health may be known, and they should always be regarded as "suspects."

Centralblatt f. Bakteriologie u. Inf.-Kr., Jena.

Last indexed page 290.

100 (No. 6.) Ueber ein neues zur Gruppe des Influenza-Bacillus gehöriges hemoglobinophiles Bakterium. E. Friedberger.
101 Ueber ein beim Thier gefundenen Influenza-ähnlichen Bacillus. A. Wolff.
102 Investigation of Water Courses in China. G. Mayer.—Untersuchungen von Wasserläufen in China.
103 Bacteriologic Study of Sweepings of Warships. C. M. Belli (Padua).—Bakt. Untersuchungen über das Kehricht der Kriegsschiffe.
104 Ueber eine Fisch-Epidemie bei Bukarest. V. Babes and P. Riegler.
105 Remarks on Discovery of Parasite of Texas Fever, etc. Ibid. Bemerkungen über die Entdeckung des Parasiten der seuchenhaften [illegible] s Fieber, tristeza, etc.).
106 Zur Frage des [illegible] von der Mutter auf de[illegible]
107 Wasser-Untersuchungen und Typhus-Bacillus. H. Bonhoff (Marburg).
108 Die Deykesche Pepsin-Trypsin-Agar ein Nährboden für Diphtherie-Bacillen. B. Bosse.
109 Metal Stopper for Reagent Glasses. F. Gloge (Hamburg).—Ein Metalverschluss für Reagensgläser.

Deutsches Archiv f. Klin. Medizin, Leipsic.

Last indexed page 215.

110 (LXXVI, 4-5.) *Influence of the Ho[illegible] to Tuberculosis. Romberg and G. [illegible] —Einfluss der Wohnung auf die Erkr[illegible]
111 Zur Kenntnis der hematogenen Miliar-Tuberkulose der Lungen. K. Sawada (Marburg).
112 *Study of Blood After Splenectomy. R[illegible] Blutuntersuchungen bei einem Fall v[illegible]
113 Experimental Research o[illegible] Pressure in the Sheath [illegible] —Exp. Untersuchungen [illegible] im Rückenmarkssack.
114 *Origin of Spleen Tumor. J. A. *Grober* (Jena).—Die Entstehung des Milztumors: Hyperplasie oder Hyperemie?
115 Beobachtungen über Amöben-Enteritis. A. Gross (Kiel).
116 *Physikalischen Untersuchungen bei der Anwendung des Magenschl[illegible] stomach tube). P. [illegible]
117 Ue[illegible] entstandene Malaria [illegible] A. Jancso (Kolozsvar. See editorial page 39.
118 Iron Test. A. Jolles (Vienna).—Zur colorimetrischen Eisenbestimmung.

110. **Influence of the Dwelling on Susceptibility to Tuberculosis.**—See editorial in Journal, Aug. 1, p. 23.

112. **Study of the Blood After Splenectomy.**—The results of careful research in the case described fail to demonstrate any participation of the spleen in the formation of red corpuscles or that it shares to any extent in the production of most of the leucocytes, although it may coöperate in the production of lymphocytes. On the whole, extirpation of a healthy spleen does not seem to affect the blood production or suggest any participation of this organ in the process.

114. **Enlargement of Spleen in Infectious Diseases.**—Grober states that in acute sepsis in mice and in acute miliary tuberculosis in guinea-pigs the enlarged spleen was found to contain much more water than normally. All the inflamed tissues contained an abnormally large proportion of water. He therefore

attributes the enlargement of the spleen in infectious diseases to hyperemia of the organ.

116. **Atmospheric Pressure in Esophagus and Stomach.**—Schlippe states that during inspiration in ordinary conditions the pressure in the esophagus is negative while in the stomach it is positive. In both it is under the influence of the respiration. He found that the lumen of the cervical portion closes during inspiration, and that the cardia sometimes closes but not always.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

119 (XXIX, 25.) Destructive Metabolism of Albuminoids in Hunger. F. Blumenthal (von Leyden's clinic, Berlin).—Zum Abbau der Eiweisskörper im Hunger.
120 Weitere Untersuchungen über Streptococcen. H. Aronson (Charlottenburg).
121 *"Kidney Death," Kidney Insufficiency and Functional Kidney Tests. L. Casper.—Nierentod, Niereninsuffizienz und funktionelle Nierenuntersuchung.
122 60 Cases of Tendon Grafting. Reichard (Magdeburg).—60 Sehnenverpflanzungen.
123 *Affections of Lateral Columns and Spastic Paralysis. M. Rothmann (Berlin).—Seitenstrangerkrankungen und spastische Spinalparalyse. (Commenced in No. 24.)
124 Comment on Report of New York Committee. A. Eulenburg.—"Das soziale Uebel" (evil).
125 (No. 26.) *Experimentelle Beiträge zur Frage der Typhus-Verbreitung durch Butter. Carl Bruck.
126 *Ueber die Symbiose des Influenza-Bacillus. M. Neisser (Frankfurt a. M.).
127 Bacillus of Turtle Tuberculosis. F. T. Friedmann (Berlin).—Der Schildkrötentuberkelbacillus, seine Züchtung, Biologie und Pathogenität.
128 Successful Inoculations of Monkeys with Agent of Ulcus Molle.—E. Tomasczewski.—Impfungen an Affen mit dem Erreger des Ulcus molle.
129 *Tuberkulose und Carcinoma in derselben Familie. E. Aronsohn.
130 (No. 27.) *Prophylaxis of the Plague at Berlin. M. Kirchner.—Die sanitäts-polizeiliche Bekämpfung der Pest. (Commenced in No. 26.)
131 Ueber eine akut aufgetretene trophoneurotische Erkrankung einer ganzen unteren Extremität. E. Grawitz.
132 Ueber die Diagnose der Pentosurie mit dem von mir angegebenen Reagens. M. Bial (Kissingen).
133 Ueber die chirurgische Behandlung des Ascites bei Lebercirrhose. D. G. Zesas (Kiel). One case; successful.
134 Epiphyseolyse mit subkutaner Periosteotomie zur Behandlung des Genu valgum infantum. M. Reiner (Lorenz's ambulatorium, Vienna).

121. *Functional Kidney Tests.—Casper states that* the phloridzin functional test of the kidney allows an exact diagnosis of the location of a kidney affection; it affords information in regard to the composition and functioning capacity of the other kidney not to be obtained in any other way, and makes it possible to avoid the preventable "kidney deaths," and thus materially diminish the mortality from kidney operations. Israel has been denying the reliability of the phloridzin test, and announces that without it he has been successful in all but 5 of his last series of 80 operations on the kidney. These assertions roused Casper to analyze Israel's cases published before this last series, and he unhesitatingly declares that many of the fatalities might have been prevented if the phloridzin test had been known at the time and applied. Out of the 9 "kidney deaths," 4 at least were directly due to the removal of the kidney when the remaining kidney was already fatally compromised. Even in his last series of 80, he had 5 deaths while none occurred in Casper's series of 72 cases operated on after he had determined the functions of the remaining kidney. His record to date is 88 cases operated on by various surgeons and the findings of the tests were confirmed by the operation in every instance. The kidney stated to be diseased by the test was found diseased, and the kidney proclaimed by the test to be sound was found sound, when intervention was undertaken contrary to the findings of the test. Nine of the 88 patients died and the findings confirmed the results of the test in the 7 autopsies that were allowed. None of them could by any possibility be called a "kidney death." In 3 other cases the test showed partial or complete absence of function in the second kidney, and the autopsy later showed contracted kidney in one, amyloid degeneration in one and in the third the absence of a second kidney.

123. **Affections of Lateral Columns and Spastic Paralysis.**—Rothmann comments that nothing hinders more the progress of science than clinging to certain theories when the facts observed no longer sustain them. Such a theory is the acceptance of spastic paralysis as a symptom of an affection of the crossed pyramidal fasciculus or of the posterior or lateral tracts in general. His observations on man and experiments on monkeys have convinced him of the contrary. The cases of true spastic paralysis are so rare that they can scarcely serve as a basis for a definite morbid entity, but if this is accepted, then the affection should be known as "Erb's *spastic pseudoparalysis*," and the conception of spastic paralysis should be reserved for the spastic, paretic symptom-complex observed in cases of actual paralysis of the legs. The exaggeration of the tendon reflexes and the slight weakness of the extremities are due to the degeneration of the pyramidal tracts. The spastic condition is the consequence of some irritating action on the cells of the anterior cornua, the cause of which has not yet been anatomically established and may be manifold. The degeneration of the pyramidal tracts can at most only afford a predisposition.

125. **Experimental Tests of Dissemination of Typhoid by Butter.**—The experiments reported by Bruck from the Institute for Infectious Diseases demonstrate conclusively that the transmission of typhoid fever may easily occur by means of butter. In some of the tests water in which a cloth slightly soiled with typhoid stool had been washed was used to rinse out the vessels in which the cream was kept. Butter made from the cream developed colonies the first day. The typhoid stool used for the purpose contained only about 16 colonies to a plate. Although not absolutely certain, Bruck believes that the bacilli are liable to be more numerous in the butter than in a corresponding amount of cream or buttermilk. Living bacilli were found in the butter as late as the twenty-seventh day. They seemed to increase in number during the first few days.

126. **Symbiosis of Influenza Bacillus.**—Neisser reports that he has succeeded in cultivating through twenty generations some influenza bacilli, derived from a case of measles conjunctivitis and found associated with xerosis bacilli. The influenza bacilli died out except when this symbiosis with the xerosis bacillus was maintained. He suggests that the latter may modify the medium in some way (blood agar) to render it more favorable for the influenza colonies. He found that the diptheria bacillus will also serve as "nurse," as he calls it, for the influenza germ in this way. but not so successfully as the xerosis bacillus. It is possible, he adds, that symbiosis with certain invisible bacilli may be an important factor in the flourishing of the influenza germ.

129. **Tuberculosis and Cancer in Same Family.**—Aronsohn adds 3 more to his previously published list of 11 families in which cancer and tuberculosis had both occurred, and reports another in which the daughter died from tuberculosis after a course at a sanatorium and the mother exhibited a cancer of the uterus soon after. The father and another child now show symptoms of tuberculosis and one other has hematemesis which suggests malignant disease. Croner's statistics taken from the records of the Victoria Life Insurance Company show tuberculosis in 13.9 per cent. of the families in which cancer has occurred, and tuberculosis in the parents in 22.7 per cent. of the policyholders that have died from cancer. Aronsohn cites these facts as testimony in favor of his assumption that cancer, lupus and tuberculosis all belong to the same family.

130. **The Plague Case at Berlin.**—Kirchner ascribes Dr. Sachs' infection to the following circumstances: The latter was always extremely careful in observing the precautions imposed in the Institute to prevent infection, but one day he aspirated with a Pravaz syringe some of the glandular juice from a bubo on a guinea-pig that exhibited a typical case of experimental plague. He then expelled the juice from the syringe on a plate of agar according to the usual technic, but for some reason the fluid did not issue as usual in a fine stream, but in the form of a spray. The authorities ascribe the infection to inhalation of some of the droplets of this spray, as the incubation from this date corresponded to the accepted period of plague incubation—five days. During the great epidemics of plague in history the physicians kept at a distance from the patients and indicated their orders by a long wand, as the profession afforded many victims until this precaution was observed. Laboratory experiments show that the plague ba-

cilli die in water in less than two days, and also in the cadaver very early. The danger lies in the patient himself, his linen, dejecta, etc., and the disinfection of the residence afterward is of much less moment than systematic and repeated disinfection at the bedside.

Janus, Amsterdam.

Last indexed XXXIX, page 1647.

135 (VII, 12.) A Great Practitioner of the Sixteenth Century, Petrus Forestus. L. Meunier.—Le hollandais Pierre van Foreest, 1522-1595. (Concluded).
136 [illegible] W. Basler (Tübingen).—Die [illegible] Ansicht der Alten.
137 [illegible] Before 1800. A. Jacobi (New York). (Concluded.)
138 *De la névrite retro-bulbaire alcoolique dans l'antiquité. Deneffe.
139 Brief Sketch of History of Medicine in Russia. M. Lachtin.—Kurzer Abriss über die Geschichte der Medicin in Russland.
140 The Cradle and First Ages of Pharmacy. L. Boriani (Bologna).—Le berceau et les premiers ages de la pharmacie.
141 La dernière maladie du comte de Neyperg, 1829. Carbonelli (Turin).
142 (VII, 1.) *Some American Contributions to Development of Modern Therapeutics. S. Baruch (New York).—Einige am. Beiträge zur Entwicklung der modernen Therapie. (Concluded.)
143 Th[illegible] T. v. Györy (Buda-[illegible] [illegible]emmelweis.
144 *Pr[illegible] Problems. M. Neu-[illegible] [illegible]l. Probleme.
145 Te[illegible] Spain. R. Ulecia.—L'enseignement de l'historie de la médecine en Espagne.
146 (No. 2.) *Plague in Turkey, 1897-1902. C. Stékoulis (Constantinopl[illegible] [illegible]este bubonique en Turquie pendant l[illegible] [illegible]es.
147 History of [illegible] in Germany. P. Richter.—Beitrag [illegible] Auftretens der Syphilis in Deutschland.
148 (No. 3.) *School of Maritime and Colonial Health at Naples. F. Rho (Naples).—L'enseignement à l'école de santé maritime et coloniale dans l'université de Naples.
149 *Linnæus as Physician. W. Ebstein (Göttingen).—Carl v. Linné als Arzt.
150 Jean F. X. Pugnet (medical officer under Napoleon). H. Gros.
151 Side Lights on Florentine Academy and the Anatomic Drawings of Vesalius. R. v. Töply (Vienna).—Aus der Renaissance-Zeit, etc.
152 Experimenta Magistri Gilliberti, Cancellarii Montispessulani. P. Pansier. (Published for first time from manuscript.) (Concluded.)
153 History of the Evolution of the Theory of Gases. F. Strunz.—Beitrag zur Klarstellung der Naturwissenschaft des Johann Baptist van Helmont, 1577-1644. (Concluded.)

138. **Alcoholic Retrobulbar Neuritis in Antiquity.**—Deneffe cites one of Martial's epigrams (No. 78, Sixth Book) to show that the deleterious action of alcohol on the eyes was known at that date, 54 to 98 A. D. Phryx, a hard drinker, warned by his physician that he would lose the sight of his one eye if he continued to drink, exclaimed: "Farewell, eye," and continued his alcoholic excesses. "Phryx drank the wine and his eye the poison, with the result that he became totally blind."

142. **American Contributions to Development of Modern Therapeutics.**—Baruch quotes, among other interesting matter, Oliver Wendell Holmes' writing in 1843 in regard to the infectiousness of child-bed fever, and compares his statements with those of Semmelweis who proclaimed the same idea in Germany in 1847, independently of the American. Both met with ridicule and opposition from their contemporaries at first, but conviction soon followed, and energetic antiseptic measures were then adopted. Baruch himself was the first to denounce the latter which were being enthusiastically advocated by Gaillard Thomas at that time, 1884. Fordyce Barker supported him and at a symposium on the subject, summoned by the latter, Thomas receded from his position and this change of views banished strong antiseptic vaginal douches from obstetric practice.

144. **Early History of Two Physiologic Problems.**—The relations between the nervous system and nutrition, and the internal secretions of the organs, are the two problems referred to. Each was discussed in scientific gatherings as early as the seventeenth century, and Neuburger relates some of the curious ideas advanced on the subject and recorded in the transactions.

146. **Plague in Turkey.**—Stékoulis states that the plague has existed in Assyria but strictly localized, since 1826, but Turkey has been free except for a small epidemic in 1885 near Bagdad. In 1897 it appeared at Djeddah and since then occasional cases have occurred at various points, including Constantinople, but the number of cases has not surpassed 471 with 338 deaths. All but 101 occurred at Djeddah or Yambo. With the exception of the old localized endemic in Assyria, the plague cases never caused wide contagion, and although the disease clinically is the same as in the days of the "black plague," yet epidemiologically it has nothing in common with it. If it were not for its traditional name, he concludes, the populace would be less alarmed at the progress of the plague and sanitary measures might be modified in accordance with the teachings of modern science.

148. **Maritime and Colonial Medical School at Naples.**—Rho states that over four millions of Italians live outside of Italy. A million and a half are settled in Brazil and half of these pursue agricultural occupations. Emigration has been constantly increasing during the last thirty years, and now surpasses that from any other country. During the first half of 1902, 354,000 emigrants left Italy, 148,000 permanently. The majority, however, go from one country to another in search of work and frequently return to Italy, so that the temporary emigration is always larger than the permanent, and the population of the country still keeps on increasing. A law has been in force for about a year which regulates the emigration and guards the poorer emigrants both morally and physically. The emigrant ships are obliged to carry a naval medical officer as a government medical official, and if the emigrants number more than 700, a civilian physician accompanies him. The naval medical officers are trained in climatology and tropical pathology, naval hygiene and the pathology of the ports to which the ships are destined. Chairs of tropical pathology and naval hygiene have been founded at Naples and placed in charge of Rho and Pasquale, both upper medical officers in the royal navy. A special school for tropical diseases has also been founded, in charge of Giaxa and four other professors, and a hospital for returning emigrants. The school has already 37 young physicians as students who are fitting themselves for this maritime service, or its branches in the seaports.

149. **Linnaeus as a Physician.**—Ebstein refers to Hektoen's article on this subject in The Journal of Sept. 13, 1902, but has had access to other sources of information and supplies some further details. Two portraits of the great botanist accompany the article.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially P[illegible] [illegible]edicine, Neurology, Surgery, Therapeutics, [illegible] Pathology, Dermatology, Diseases of the [illegible] Throat, and Other Topics of Interest to Students and Practitioners by Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., [illegible] [illegible]ith the Collaboration of John B. Murphy [illegible] [illegible]der D. Blackader, M.D., Montreal; H. C. [illegible] T. M. Rotch, M.D., Boston; E. Landolt, [illegible] [illegible]orton, M.D., Philadelphia; James J. Walsh, M.D., New York; J. W. Ballantyne, M.D. [illegible] [illegible]n Harold, M.D., London; with Regular [illegible] [illegible]eal, London, Paris, Leipsic and Vienna. [illegible] Series. Cloth. Pp. 311. Price, $2.00. [illegible] J. B. Lippincott Company.

The Practical Medicine Series of Year Books, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume VI, General Medicine. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Chicago Clinical School. May, 1903. Volume VII, Pediatrics. Edited by Isaac A. Abt, M.D., Assistant Professor of Medicine (Pediatrics Department), Rush Medical College. Orthopedic Surgery. Edited by John Ridlon, A.M., M.D., Professor of Orthopedic Surgery, Northwestern University Medical School. June, 1903. Cloth. Pp. 312 and 232 Respectively. Price, $1.50 and $1.25. Chicago: The Year Book Publishers.

Microscopy an[illegible] [illegible] Manual for Students and Practitioners. By [illegible] [illegible].M., M.D., Demonstrator of Microscopy and [illegible] University of Louisiana, Medical Departme[illegible] [illegible] Edited by V. C. Pedersen, A.M., M.D., Instructor in Surgery and Assistant Anesthetist at the New York Polyclinic Medical School and Hospital. Illustrated with 74 Engravings. Cloth. Pp. 210. Philadelphia and New York: Lea Brothers & Co.

Diseases and Injuries of the Eye, with Their Medical and Surgical Treatment. By George Lawson, F.R.C.S. Eng., Surgeon-Oculist-in-Ordinary to Her Majesty, the Late Queen Victoria. Sixth Edition, with 249 Illustrations. Revised and, in Great Measure, Rewritten. By Arnold Lawson, F.R.C.S. Eng., Assistant Surgeon to the Royal London Ophthalmic Hospital. Cloth. Pp. 587. Price, about $5. London: Smith, Elder & Co. 1903.

Medical Jurisprudence. A Manual for Students and Practitioners. By Edwin Welles Dwight, M.D., Instructor in Legal Medicine, Harvard University. Series Edited by V. C. Pedersen, A.M., M.D., Instructor in Surgery and Assistant Anesthetist at the New York Polyclinic Medical School and Hospital. Cloth. Pp. 249. Philadelphia and New York: Lea Brothers & Co.

First Principles of Otology. A Text-Book for Medical Students. By Albert H. Buck, M.D., New York City, Clinical Professor of the Diseases of the Ear, College of Physicians and Surgeons. Second Edition. Cloth. Pp. 216. Price, $1.50 net. New York: Wm. Wood & Co. 1903.

Department of the Interior. Bureau of Government Laboratories. Biological Laboratory. A Preliminary Report on Trypanosomiasis of Horses in the Philippine Islands. By W. E. Musgrave, M.D., and Norman E. Williamson. Paper. Pp. 26. Manila Bureau of Public Printing. 1903.

Gynecology. A Text-Book for Students and a Guide for Practitioners. By William R. Pryor, M.D., Professor of Gynecology in the New York Polyclinic Medical School. 163 Illustrations in the Text. Cloth. Pp. 380. Price, $3.50. New York and London: D. Appleton & Co. 1903.

Transactions of the Southern Surgical and Gynecological Association. Volume XV. Fifteenth Session, Held at Cincinnati, Ohio, Nov. 11, 12 and 13, 1902. Edited by W. D. Haggard, M.D. Cloth. Pp. 444. Published by the Association. 1903.

Report of Working Party No. 1, Yellow Fever Institute. A Study of the Etiology of Yellow Fever. By Herman B. Parker, George E. Beyer and O. L. Pothier. March, 1903. Paper. Washinton: Government Printing Office. 1903.

My Child and I. In Sickness and Health from Pre-natal Life Until Sixteen. By Mrs. F. L. S. Aldrich, M.D., Member of the American Medical Association. Cloth. Pp. 429. Price, $1.50. Philadelphia: P. W. Ziegler & Co. 1903.

The Annual Report of the Department of the Insane of the Pennsylvania Hospital, for the Year Ending April 23, 1903. Paper. Pp. 37. Philadelphia. 1903.

Hygienic Laboratory Bulletin No. 9. Presence of Tetanus in Commercial Gelatin. By John F. Anderson. Paper. Pp. 6. Washington: Government Printing Office. 1902.

The Public Service.

Army Changes.

Movements of Officers of the Medical Department, U. S. A., under orders from the Adjutant-General's Office, Washington, D. C., for the week ending Saturday, July 18, 1903:

Bushnell, George E., major-surgeon, is relieved from duty at Fort Logan, and will proceed to Fort Bayard and report at the U. S. General Hospital at that place for duty.

Crosby, William D., major-surgeon, is granted leave for one month.

Parkham, Wallace E., contract surgeon, granted leave until June 2, is granted an extension for one month.

Ten Eyck, Benjamin L., major-surgeon, is directed to report to Major-General John C. Bates, president of the Army Retiring Board, at Chicago, Ill., for examination by the board. On the completion of his examination, Major Ten Eyck will return to his proper station.

Trenholtz, Clarence A., contract surgeon, is relieved from further duty in the Department of the Columbia and, on the expiration of his present leave, will proceed to Fort Apache for duty.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended July 25, 1903:

Medical Director J. C. Boyd, commissioned medical director, with rank of captain, from June 20, 1903.

Surgeon E. O. Huntington, detached from the *Maine* and ordered to the Naval Hospital, Navy Yard, New York, for treatment.

Surgeons R. K. Smith, A. W. Dunbar, A. Farenholt, C. P. Bagg, E. J. Grow, M. S. Elliott, commissioned surgeons, with the rank of lieutenant-commander, from March 3, 1903.

P. A. Surgeon R. W. Plummer, ordered to the *Maine*.

Asst.-Surgeons C. E. Ryder and J. A. Randall, appointed asst.-surgeons, with rank of lieutenant, junior grade, from June 26, 1903.

Surgeon C. P. Kindleberger, ordered to the *Independence*.

Asst.-Surgeon A. Stuart, granted sick leave for two months.

Surgeon G. P. Lumsden, detached from the Naval Station, Port Royal, S. C., August 1, and ordered to the Torpedo Station, Newport, R. I.

Surgeon R. M. Kennedy, detached from the Torpedo Station, Newport, R. I., and ordered to the *Dixie*.

A. A. Surgeons A. H. Wise and C. T. Grayson, appointed acting asst.-surgeons, with rank of lieutenant, junior grade, from July 14, 1903.

A. A. Surgeon P. L. Cocke, detached from the *Chesapeake* and ordered to the Naval Hospital, New York, for treatment.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 23, 1903:

Assistant Surgeon-General A. H. Glennan, to proceed to Reedy Island quarantine for special temporary duty.

Assistant Surgeon-General L. D. Williams, granted leave of absence for seven days from July 18.

Surgeon J. H. White, granted extension of leave of absence for one month from August 2.

P. A. Surgeon E. K. Sprague, granted leave of absence for ten days from July 22.

P. A. Surgeon Taliaferro Clark, granted extension of leave of absence for fourteen days from July 20.

P. A. Surgeon H. B. Parker, to report to Assistant Surgeon-General H. D. Geddings for temporary duty.

A. A. Surgeon B. F. Duke, granted leave of absence for two days.

A. A. Surgeon S. C. Leonhardt, granted leave of absence for thirty days from September 1.

Pharmacist C. W. Stephenson, granted leave of absence for twenty-three days from August 3.

Pharmacist G. W. Iltis, granted leave of absence for seven days from July 15, 1903, under paragraph 191 of the Regulations.

RESIGNATION.

A. A. Surgeon S. C. Leonhardt, resigned, to take effect Oct. 1, 1903.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 24, 1903:

SMALLPOX—UNITED STATES.

Colorado: Denver, June 18-July 11, 15 cases.

Illinois: Chicago, July 11-18, 1 case; Danville, July 11-18, 1 case.

Indiana: Indianapolis, July 11-18, 1 case.

Louisiana: New Orleans, July 11-18, 3 cases.

Massachusetts: Fall River, July 11-18, 9 cases.

Michigan: Detroit, July 11-18, 3 cases; Port Huron, July 11-18, 2 cases.

Mississippi: Natchez, July 4-11, 1 case.

Missouri: St. Louis, July 4-11, 6 cases.

Nebraska: South Omaha, June 1-30, 6 cases.

New Hampshire: Manchester, July 11-18, 2 cases.

Pennsylvania: Carbondale, July 14-21, 1 case; Philadelphia, July 11-18, 24 cases, 14 deaths; Pittsburg, July 11-18, 29 cases, 8 deaths; Norristown, July 11-18, 1 case.

Ohio: Cincinnati, July 10-17, 4 cases; Cleveland, July 11-18, 1 case.

South Carolina: Charleston, July 11-18, 6 cases, 2 deaths.

Wisconsin: Milwaukee, July 11-18, 2 cases.

SMALLPOX—FOREIGN.

Austria-Hungary: Prague, June 20-July 4, 5 cases.

Belgium: Antwerp, June 27-July 4, 7 cases, 4 deaths; Brussels, June 27-July 4, 5 deaths; Ghent, June 20-July 4, 3 deaths.

Canada: Winnipeg, July 11-18, 1 case.

China: Hongkong, May 23-30, 1 death; Shanghai, June 6-13, 1 death.

Colombia: Bocas del Toro, June 30-July 7, 2 cases, 1 death.

Great Britain: Birmingham, July 4-11, 1 case; Dublin, June 27-July 4, 9 cases, 1 death; Leeds, July 4-11, 7 cases, 1 death; Liverpool, to July 11, 44 cases, 3 deaths; London, July 4-11, 4 cases; Manchester, June 27-July 4, 9 cases; Newcastle-on-Tyne, June 27-July 4, 1 case; Nottingham, June 27-July 4, 2 cases.

India: Bombay, June 16-23, 21 deaths; Calcutta, July 13-20, 4 deaths; Madras, July 13-19, 1 death.

Japan: Formosa, April 1-May 31, 7 cases.

Mexico: City of Mexico, June 28-July 5, 7 cases, 3 deaths.

Russia: Moscow, June 20-27, 3 cases; Riga, April 1-30, 28 deaths; St. Petersburg, June 27-July 4, 18 cases, 1 death; Warsaw, June 13-27, 6 deaths.

Spain: Barcelona, June 20-July 4, 4 deaths.

Turkey: Smyrna, May 24-June 14, 3 deaths.

SMALLPOX—INSULAR.

Philippines: Manila, May 16-June 13, 13 cases, 9 deaths.

YELLOW FEVER.

Colombia: Panama, July 6-13, 3 cases, 1 death.

Costa Rica: Limon, July 2-9, 3 cases, 2 deaths.

Mexico: Cardenas, July 10, 1 death, imported from Tampico; Coatzacoalcos, June 27-July 4, 2 cases, 4 deaths; Merida, July 12, present; Progreso, July 12, present; Tampico, June 27-July 11, 61 deaths; Vera Cruz, June 27-July 11, 64 cases, 21 deaths.

CHOLERA—INSULAR.

Philippines: Manila, May 16-June 13, 127 cases, 112 deaths; Provinces, May 16-June 13, 2,463 cases, 1,718 deaths.

CHOLERA—FOREIGN.

India: Calcutta, June 13-20, 34 deaths, sporadic.

Straits Settlements: Singapore, May 30-June 6, 1 death.

Turkey in Asia: Beytarie, June 6-13, 26 cases, 23 deaths; Kara, June 8-14, 13 cases.

PLAGUE—INSULAR.

Hawaii: Honolulu, June 24-25, 2 deaths.

Philippines: Manila, May 16-June 13, 19 cases, 19 deaths.

PLAGUE—FOREIGN.

Africa: Cape Colony, May 17-30, 19 cases; Natal, May 10-16, 5 cases.

China: Amoy, May 8-June 13, 525 cases.

India: Bombay, June 16-23, 92 deaths; Calcutta, June 18-20, 31 deaths; Mauritius, June 11-18, 2 cases.

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Original Articles.

RECENT INVESTIGATIONS BEARING ON INFECTIOUS DISEASES OF UNKNOWN ETIOLOGY.

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CHICAGO.

There is a number of transmissible diseases, both human and animal, some of them exquisitely contagious, the causes of which are still unknown, notwithstanding the most careful search. Of the human diseases belonging to this group I would mention especially scarlet fever, measles, chicken-pox, yellow fever, typhus fever and hydrophobia. Smallpox and vaccinia may also be left here for the present. Of the animal diseases of this group the most important are foot and mouth diseases, peripneumonia, bovine pest, sheep-pox (clavelée), chicken-typhus or chicken-pest, "horse sickness" and epithelioma contagiosum of fowls. The "mosaic disease" of the tobacco plant ("Mosaik oder Fleckenkrankheit des Tabaks") may be given as an example of a contagious plant disease of unknown etiology.

THE INFECTIOUS NATURE OF THE DISEASES DISCUSSED.

In discussing the probable nature of diseases of this kind perhaps the first question to arise will be, "What evidence is there that they are caused by living, infectious organisms?"

In the first place, the demonstration that many of the diseases mentioned may be inoculated successively from animal to animal indicates that it concerns living virus capable of reproduction, and that the diseases in question are true infections, and not intoxications. There are few known poisons, indeed, of such virulency that intoxication is produced by transferring small quantities of the organs or fluids of a poisoned animal to a healthy animal. White mice may be inoculated with tetanus by injecting into the peritoneal cavity a small quantity of the blood of a horse or of a human being suffering with tetanus, but it is not possible to produce tetanus in a progressive series by inoculating other mice with the blood or tissue of mouse No. 1. Now, the toxin of tetanus is one of the most powerful yet known. In 1893 Nicolas[1] reported the production of human tetanus by the accidental inoculation of a small quantity of tetanus toxin. This occurred on a much larger scale in St. Louis, and Bolton, Fisch and Malden[2] found that the serum of a horse in the period of incubation preceding tetanus may contain enough tetano-toxin to produce fatal tetanus in children when injected in the quantities contained in curative antidiphtheria serum. Bolton and Fisch[3] found no free tetano-toxin, however, in the blood, spinal fluid and other tissues of the children so infected with tetanus. They also showed that in horses the development of tetanic symptoms coincides with the disappearance of toxin from the blood. There is no evidence whatever that a purely toxic disease like this can spread directly from patient to patient in the manner characteristic of most of the diseases just mentioned.

Perhaps the most striking experiment showing the inoculability of an infectious disease of unknown etiology is that of Loeffler and Frosch[4] with the filtered contents of the vesicles in foot and mouth disease of cattle: .02 c.cm. of this fluid, freed from visible bacteria and cells by filtration, were injected into animal No. 1, which became sick in a typical manner; the same quantity of similar material similarly treated was transferred from animal No. 1 to animal No. 2, in which there was again produced the same disease; this was carried on successively from animal to animal through a series of six members. Loeffler and Frosch estimate that the sixth animal received less than a two-billionth part of the original quantity of lymph. Inasmuch as .000002 c.cm. of the fresh lymph is not infectious, the only explanation that can be offered in this case is that the virus or cause of foot and mouth disease is a living one capable of proliferation.

Similar experiments, but on a smaller scale, by König indicate that the "mosaic disease" of the tobacco plant is caused by a living, reproducing, infectious agent.

The facts observed in connection with variolation and vaccination, and the spontaneous communicability of smallpox, leave little room for the conception of any other etiologic agent than a l[illegible] under favorable conditions, of rapid [illegible] fact that the quantity of pus was of no import in securing the development of good pustules in smallpox inoculation was used by Linnæus in the middle of the eighteenth century as evidence in favor of his theory that contagious diseases are caused by "animalcula infinite parva." Wasielewsky secured active vaccine material after successive inoculations from cornea to cornea of no less than forty-six rabbits—a result that certainly indicates multiplication of the virus at the points of inoculation.

In the case of scarlet fever, measles, syphilis, typhus fever and yellow fever, peculiar difficulties present themselves to experimental investigation because of the lack of susceptible animals, but the pronounced contagiousness of nearly every one of these diseases leaves no room to doubt their infectious nature. And in the case of yellow fever the epochal investigations of Reed, Carroll and Agramonte have shown that the cause of the disease occurs in the blood, whence it is conveyed to susceptible persons by the blood-sucking mosquito, *Stegomyia fasciata*.

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[1] Compt. rend de la Soc. de Biol., 1893, v, 844 846.
[2] St. Louis Med. Review, Nov. 23, 1901.
[3] Trans. Am. Asso. of Phys., 1902, xvii, 462-467.
[4] Centralbl. f. Bakt., 1898, xxiii, 371-391.

Is there any evidence that transmissible diseases are caused by enzymes? Now it has been suggested that some of these diseases may be caused by enzymes that act catalytically, and not by virtue of any toxicity of their own. We can understand how enzymes might cause epidemic-like diseases after the manner of certain intoxications of exotic origin, and further, that enzymes may play an essential rôle in the pathogenesis of the diseases, but there is, after all, no evidence at hand that enzymes alone, entirely independently of living organisms as their source, can cause transmissible diseases, like measles, foot-and mouth disease and yellow fever.*

As yet we are hardly prepared to receive the hypothesis that certain contagious and communicable diseases are caused by enzymes or other substances that are not directly traceable to living matter—the theory of the contagium vivum has proven itself too heuristic to be abandoned lightly in favor of another hypothesis without analogy and so far insusceptible of demonstration. After all, the continuous metabolism and the power of reproduction characteristic of living matter explain most satisfactorily at present the nature of the causes of the transmissible diseases like these now discussed.

WHAT, THEN, MAY BE SOME OF THE REASONS THAT THE ORGANISMS OF THESE DISEASES HAVE NOT BEEN DISCOVERED?

1. *Incultivability.*—Perhaps the most generally accepted explanation offered of the failure to secure artificial cultures of the organisms that we may suppose cause the diseases in question is that they are of protozoan causation, because of the failures until very recently to grow protozoa. But there are numerous bacteria that refuse to grow on any of the various culture media now available. The bacillus of leprosy, the spirillum of Obermeyer, and leptothrix may be cited as examples of bacteria of well-known morphology that refuse to grow on our media. And then Novy, before the Section of Pathology and Bacteriology of the New Orleans meeting of the Association, demonstrated successful cultures of rat trypanosoma on agar and defibrinated rabbit's blood, so that it is now clearly shown for the first time that it is possible to cultivate pathogenic protozoa. Hence the failure of artificial culture experiments does not mean much as regards either the nature of a given virus, or as to its absence or presence in a given material. The peculiarities in regard to cultural substratum and other conditions necessary for the growth of the bacillus of tuberculosis, the gonococcus, and the bacillus of influenza serve as illustrations of the ingenuity required in order to meet the wants of many pathogenic bacteria. Now it may be that the microbes of measles and the other diseases mentioned are obligate parasites in the strictest sense, and that cultures are obtainable only by natural growth in the fluids and tissues of infected persons and animals. Thus it was by a combination of natural and artificial conditions that Nocard and Roux[5] first obtained evidences of actual growth of the organism of infectious peripneumonia of cattle, namely, by the use of collodion sacs filled with bouillon and serum, and inserted after being inoculated with infectious peripneumonic lymph into the abdomen of rabbits and cows. These cultures *in vivo*, thus surrounded by a diffusible membrane that permitted a ready molecular exchange between the enclosed and the surrounding fluids, soon gave evidence of growth by the increased infectiousness and clouding of the medium, microscopic examination of which showed forms so minute that with the highest obtainable magnification no definite idea as to their exact morphology could be obtained. This organism, therefore, is considered as on the border line between the visible and invisible. Eventually Nocard and Roux obtained subcultures in Martin's peptone bouillon mixed with a small quantity of rabbit's or cow's serum (1-20), and on agar mixed with this bouillon-serum.

Again, in the case of diseases that only affect man it is not without range of possibility that the failure of our artificial cultures made with infectious material is apparent, and not real. Growth may occur invisibly, but in the absence of susceptible animals even this perhaps somewhat remote possibility can not be settled by means of inoculations. On the other hand, it may be urged that if unknown viruses actually grow on culture media the resulting growth or colonies ought to be visible, as in the case of the virus of peripneumonia, even if the individual organisms are too small to be seen, or invisible for other reasons. In liquid media turbidity or other recognizable evidence of growth would be expected did growth actually occur.

The occurrence of diseases of this character among animals and in plants is of the greatest advantage to the experimental study of the many difficult problems that here confront the investigator. This makes it possible to subject infectious material containing the essential cause to various experimental procedures and then to test the result by means of carefully controlled inoculations of animals.

It remains to be seen whether any of the unknown viruses possess sufficient reducing power to enable one to detect their presence in certain mixtures by means of the bioscopic test devised by Neisser and Wechsberg, and of similar methods. Neisser and Wechsberg's bioscopy is based on the reducing power of living matter by virtue of which it secures the oxygen necessary for its metabolic activities. The test as recommended by them is made by adding sufficient methylene blue to distinctly color a suitable mixture containing cells or bacteria and then excluding the air by means of paraffin. Reduction is marked by decolorization of the fluid, the methylene blue on losing oxygen being changed into leucomethylene blue, which has no color. I have found that a convenient method of making this reaction with liquid cultures and other mixtures is to use glass pipettes drawn out thin on each side of a larger oblong chamber. These are easily sterilized, the fluids are readily drawn in by means of suction, after which the glass may be sealed off on each side of the chamber by applying heat to the thin portions. The tubes are then placed in the incubator. Joest[6] reports that his tests of the reduction properties of the virus of foot and mouth disease by the bioscopic method gave negative results. Further experiments are warranted, and by suitable controls the influence of reducing chemical substances may be excluded, at least in many cases. It is possible that in this way some clew might be obtained as to the presence of living substances that hitherto have eluded search. Numerous reduction experiments with the blood and blood serum of scarlet fever patients have so far not yielded any positive results in my hands.

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* The idea that ferments may cause contagious diseases is, of course, not of recent date. In 1878 Henry M. Lyman (Chicago Medical Journal and Examiner, 1878, xxxvii, 689), for instance, suggested that in ferments the molecules are in such rapid action as to modify the modes of motion in organized bodies or the products thereof, and that deviations from the normal furnish the ferments of hydrophobia, glanders, vaccinia, smallpox, measles, etc. Variations in the stability of molecular equilibrium would explain, he says, the variable intensity of infection in typhoid fever and other diseases as well as the fatal persistence with which an obstetrician may carry infection with him by virtue of fermentation in his own person.

[5] Ann. de l'Institut Pasteur, 1898, xii, 240-262 and 785-798.

[6] Centralbl. f. Bact., 1902, xxxi, 375.

2. *Mixed or Symbiotic Infections.*—The possibility that some of these diseases may be the result of mixed infection is another conceivable reason for the failures to isolate the specific cause, the search for which so far has been conducted, for the most part at least, on the theory that it concerns single organisms. It is conceivable that two organisms may so influence each other by symbiosis as to change materially the nature of the metabolic products from that characteristic of the organisms when growing alone. In this way non-pathogenic organisms might produce toxic substances with definite pathogenic properties, or the qualities of an originally pathogenic organism might be radically changed. The recent application by Welch of Ehrlich's lateral chain theory to bacteria, with a view to a better explanation of the production of bacteriogenous cytotoxins in infections, may prove helpful also in this case. This conception enables one to understand how it can be possible for an organism under the influence of stimuli from the body in which it has become lodged to produce by its receptor mechanism intermediary bodies that when attached to the cells of the host and complemented, would produce most serious symptoms and lesions. Particularly difficult of detection would be organisms that are pathogenic only in man. Even artificial culture would not necessarily solve the problem. From the facts at hand in regard to smallpox and scarlet fever it seems safe to conclude that in the majority of fatal cases death is not due to the original disease, but to secondary, mixed general infections with streptococci which are demonstrable in large numbers in the blood and in the internal organs of almost every fatal instance of these two diseases. In measles secondary local and general infections also play a most important part in the severe and fatal cases. Nothing definite is known in regard to mechanism whereby these secondary and dangerous infections are established.

It is possible, too, that the hiding place of the pathogenic agent may not have been detected. It may remain localized in some part of the infected body, where it manufactures the toxic substances that cause the outbreak of the general symptoms by which the disease is recognized.

3. *Unstainability.*—It has been pointed out, too, that perhaps some of these infectious agents are unstainable by our present methods. There may be no chemical affinity between the stains used and the protoplasm, or it may be physically impossible for the molecules of the stains to make their way in the interstices of the cytoplasm of the organisms.

4. *Ultramicroscopic Size.*—Furthermore, there is the possibility that certain organisms, whatever their nature, are too minute to be seen. Pasteur, in 1881, suggested that the virus of hydrophobia is too small to be seen. Now there is a definite limit to visibility. Helmholtz showed that because of dispersion of light at the margins of minute objects, those of a diameter less than 0.2 mikron can not be rendered visible in the usual sense. The influenza bacillus is generally mentioned as one of the smallest of bacteria. The diameters are given as about 0.4 mikron broad by 0.8 to 1.2 mikrons long. If it were four to five times smaller it could not be seen. The organism of peripneumonia is so small that it is just visible under the best microscopes, and it may be spoken of as on the border line between the visible and invisible. This leads us to discussion of the question of the existence of ultramicroscopic pathogenic agents, which until a few years ago were objects only of theoretic interest, but which now are receiving much study.

FILTRATION EXPERIMENTS.

For some time various forms of mineral filters—porcelain, infusorial earth, etc.—have been found useful in securing filtrates free from bacteria and other organisms; indeed, filtration is one of the classical methods of sterilization, and recent experiments with the filtration of infectious material from diseases of unknown etiology have given some very interesting and valuable results. A brief review of some of the recent work in this field is, therefore, in order.

1. *Smallpox and Vaccinia.*—So long ago as 1868 Chauveau[7] made the first experiments to demonstrate the corpuscular nature of vaccine virus. His efforts at filtration did not succeed in separating any pathogenic elements from the serum probably because of the imperfect form of filters used, but by carefully devised diffusion experiments he found that the active part of the virus settled at the bottom of his mixtures. In 1891 Schulz and Weil separated by filtration the active parts of vaccine virus from the fluid portion, and since then several other investigators, among them Gorini and Wasielewsky, have confirmed this demonstration. The latest experiments in the filtration of vaccine and smallpox virus are those of W. H. Park.[8] In order to destroy the epithelial cells which might contain the virus and hinder it from passing through the filter, he first crushed the material with fine sand under a pressure of twenty pounds to the square inch, but even now vaccine and smallpox virus failed to pass through Chamberland and Berkefeld filters. The process in itself did not destroy vaccine virus. Hence it may be regarded as definitely settled that the virus of vaccinia and variola is not filterable, as that word is now understood.

Wasielewsky[9] has showed that Guarnieri's intracellular vaccine bodies (*Cytoryctes vaccinæ*), the formation of which can be followed in the corneal cells of the rabbit after the introduction of vaccine virus, do not develop when filtrates of vaccine virus are used. As stated, Wasielewsky successfully inoculated vaccine virus from cornea to cornea through forty-six generations, a fact that virtually proves proliferation of the virus at the site of inoculation when one considers the minute quantity originally introduced. Active vaccine for children and calves was obtained from the last animal in the series. Somewhat similar bodies occur in the skin lesions of variola and vaccinia; and so far it is claimed that it has not been possible to induce such bodies to appear within the cells under any other conditions than vaccinia and variola. Any one reading carefully Wasielewsky's article can not but acknowledge that he builds a strong chain of evidence in favor of the etiologic rôle of the vaccine bodies of Guarnieri in vaccinia, but it should be remembered that Hückel,[10] in an elaborate study, reaches the conclusion that these bodies are the result training in a biologic laboratory, for this furnishes the student of anatomy and physiology with such skill as will enable him at once to get the most that is possible out of these subjects as they are taught in the best university medical schools. A knowledge of comparative anatomy will make human anatomy easier and more interesting. It is not, however, as essential for the beginner in medicine as the subjects just mentioned. For the graduate, French and German are essential, in order to keep abreast of professional progress; therefore, they should be acquired preparatory to medicine. Botany, psychology and logic, like comparative anatomy, make the acquirement of other medical subjects easier and increase the pleasure and interest of the student in them.

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[7] Comp. rend. de l'Acad. des Sc., 1868, lxvi, 289, 317, 359.
[8] Trans. Asso. Am. Physicians, 1902, xvii, 220-221.
[9] Zeitschr. f. Hyg. u. Infektionskr., 1901, xxxviii, 212-318.
[10] Ziegler's Beitrage, Supplementheft, ii, 1898.

If four of the most important of these subjects are added to existing entrance requirements, they will rarely be acquired by students in less than two years in colleges of arts or sciences, for, although in themselves they do not make more than a year's work, the schedules of colleges are so planned that they can not be taken simultaneously; and if all the subjects named were required, a college residence of at least three years would be needed. Almost without exception, therefore, other and less technical subjects will be studied as well.

A change in the entrance requirements of medical colleges which is needed, and which will do more to improve the quality of the student body than almost anything else, is to stop admitting on certificates, and to require of all who enter thorough examinations in a few required subjects.

The ideal course for medical students is a combined one of six years, leading to both the degrees of B.S. or A.B. and M.D., which such universities as Michigan, Northwestern and Chicago have been offering. Three years are spent in Michigan and Northwestern in the college of arts, during which time almost or quite all of the freshman course in medicine is completed. Three years more are spent in the medical school. At Chicago University two years are spent in the arts department and four in the medical. Harvard and Cornell make a seven-year combined course. It is so usual for all the best graduates in medicine to spend eighteen months or two years in post-graduate work that these combined courses should be made no longer than is absolutely necessary, for it is as much a detriment to the beginning practitioner to be too old as to be too young. A combined course should be completed, if possible, when the student is 24 or 25 years old. For many years a longer period of education has been required of students of medicine than for those preparing for other professions, although the emoluments of practitioners are no greater, nor as great, as those which the practice of law makes possible. Therefore, neither preparation for the study of medicine nor the arrangement of subjects in the medical curriculum should be allowed to too greatly prolong the student's period of academic and college work.

Method of Arresting Epistaxis.—Matthews is quoted by the *Journal Méd. de Paris* as advocating a condom for arresting hemorrhage from the nose. (This has been mentioned before.) The condom is oiled and inserted in the nose on the end of a catheter. The latter is then partly withdrawn, and through it the condom is inflated. The outer end is then tied around the catheter, and thus forms a "balloon tampon," which can be easily removed at any time without disturbing the clots, by allowing the air to escape first.

CO-OPERATIVE METHODS FOR IMPROVING THE USEFULNESS OF STATISTICAL CLASSIFICATIONS OF CAUSES OF DEATH.*

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One of the most important matters involved in the administration of a registration office is the selection and proper use of a statistical classification of causes of death. The mortality from various diseases must be known in order that the value of methods adopted by sanitary officers for their prevention and restriction may be appreciated, and it is important for many reasons that accurate and fully comparable statistics of causes of death be published. This presupposes the use of some classification of causes of death.

It may be said that the use of a formal classification is unnecessary, as the causes returned by physicians might be stated in alphabetical order. This would be possible for only the smallest areas of registration, and for short periods of time. For a large city, a state, or for the country as a whole, the number of different terms returned as causes of death would be so numerous that it would not be feasible to give each one a separate line in statistical tables. Even where it has been attempted to make use of the alphabetical arrangement numerous terms have usually been condensed under single titles, so that a method of classification was actually in use. Where this is not the case the statistics may be very misleading, and may give rise to annoying blunders on the part of those consulting them unless they first complete the work of proper statistical compilation that was left unfinished by the registration office. As an amusing instance, I may quote the following from a recent issue of THE JOURNAL of the American Medical Association, under the heading, "Clippings From Lay Exchanges":

> Tuberculosis of the lungs carried off twenty-five of the victims of disease last month. Seven others died of tuberculosis and four of phthisis.

It may be well at this point to call attention to the limited sense in which the word "classification" is now employed in this connection. It does not refer to a broad and comprehensive philosophical arrangement of diseases, based on general principles and intended to show the natural or scientific relations of the diseases or causes of death. If this were the object of a statistical classification of causes of death at the present time, it would be necessary to acknowledge failure from the start. No ideal classification fully exhibiting the natural relations of diseases and meeting the demands of all classes of scientific workers is yet possible. The tendency is strongly in the direction of doing away with all so-called "groups" or "classes" of diseases and of placing stress chiefly on the definite meaning and inclusion of the individual titles. "Classification," said Dr. Farr, "is another name for generalization." Our object at the present time in statistical classification of causes of death is to do away with generalization as far as possible. The old statistical groups of "zymotic diseases," "constitutional diseases," "diathetic diseases," and the like, have disappeared, or remain only as belated relics of a former nomenclature. Even the distinction between "general diseases" and "local diseases" can not be considered of any special importance to-day. The boundary is elastic, and a so-called "local" disease of to-day is placed by the advanced pathology of to-morrow among the general infections.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Hygiene and Sanitary Science, and approved for publication by the Executive Committee: Drs. S. Fulton, Seneca Egbert and H. M. Bracken.

By the adoption of a statistical classification of causes of death, therefore, we mean nothing more than the use of a certain number of titles of diseases, each with a definite inclusion of terms as returned by physicians on certificates of death. For convenience a certain general arrangement is usually followed, as in the International Classification, now in general use in this country. The titles of this system and the detailed list of terms included under each title are given in the Manual of the International Classification, published last year by the United States Census Office.

This classification was reported by Dr. Jacques Bertillon, as chairman of a committee of the International Statistical Institute at the session held in Chicago in 1893. It was the result of a movement for uniformity in statistics of causes of death that had engaged the attention of registration officials and users of mortality statistics for half a century. The Conference of State and Provincial Boards of Health indorsed it at Detroit in 1897, and the American Public Health Association recommended its general use at Ottawa in 1898, and reported a plan for its regular decennial revision by an international commission to meet at Paris in 1900. This recommendation was indorsed by the International Statistical Institute at Christiania in 1899, and the international commission for the first revision of the classification met at Paris, August 18-21, 1900, by invitation of the French government, representatives from twenty-six countries taking part in the sessions. This Section of the American Medical Association adopted a resolution in its favor at Atlantic City in 1900, and it has since been accepted by every registration state, most of the leading cities, the United States Census Office, United States Department of Labor, etc. It has been adopted by Canada, Mexico and by the countries of Central and South America, and has no rival as an international classification.

Its imperfections have never been ignored by the strongest advocates of its general adoption. It is faulty, as are all other systems. The reason for its use lies not in any perfection of the system, but because it was possible by adopting it to unite on a general basis of uniformity. This we have done, and we are now ready, by coöperative work, to amend and improve it, and make it, by means of the periodical revisions that all classifications require, more definite, more practical, more useful in every sense of the term to all who have occasion to employ statistics of causes of death.

How shall this be done? Only by enlisting the aid of all users of mortality statistics, and ascertaining in just what respects the system requires alteration to best serve their wishes.

Here it may be necessary to explain in fuller detail just what are the relations of vital statisticians to the matter of classification of causes of death generally.

The source of information in regard to causes of death is the medical profession. The individual physician who makes a statement on the medical certificate of cause of death in regard to a case that has occurred in his practice makes the first contribution to that mass of data from which come the mortality statistics. The certificate signed by the physician goes into the local registration office and is there recorded. Possibly, if in a city, it may be compiled there, and the mortality statistics [illegible] the annual report of the city board of [illegible] therefrom. In our state, as in some other registration states, the certificate is next sent to the central registration office at the capital, and is there permanently preserved. It is again compiled, first, for the Monthly Bulletin of Vital Statistics, and, second, after all delayed returns and corrections have been received, for the annual registration report. Lastly, a transcript of this certificate goes to the United States Census Office at Washington, where it is not recorded, but where the information is transferred to the cards employed in the electric tabulating machinery, and it is again compiled—this time for the annual report on mortality now required by law to be prepared by the permanent Census Office. This is the final statistical report, but all alike—the national, state and local compilations—agree in the fact that the original certificate of death signed by the attending physician is the source of all information. The validity of the statistics can not rise above the authority of their source, and, if the original statements of causes of death as made by the physicians are vague, indefinite and full of error, then the statistics must be defective and unsatisfactory to precisely the same degree.

Compilation is that process by which statistics are derived from the mass of individual records, and, for our special purpose, may be limited to the production of the finished tables of causes of death showing their various relations by locality, date of occurrence, age, sex, color, nativity, etc. It should be a colorless medium by which all of the important features of the original returns may be preserved, in condensed form, and nothing should be added to or subtracted from the significance of the original statements.

Here we may note two leading difficulties of compilation. These are, first, the condensation of the extensive list of terms reported by physicians to fit the comparatively short list of titles alone feasible in statistical reports, and second, the selection of the proper title for compilation when two or more causes have been assigned by the physician. These difficulties increase with the mass of returns to be handled, and are more pressing in the larger offices, where the vast mass of causes and complications renders some uniform system of procedure indispensably necessary.

Some idea of the large number of causes reported by physicians may be gained from examination of the Census Manual of the International Classification. Each one of these terms, with the exception of a few translated from the report of the French commission, has been actually returned on a certificate of death by some physician in the United States. And, moreover, any two or three of these terms may occur on a single certificate, and in any combination. If there were only 5,000 different terms, and there are many more than that, then there would be 25,000,000 different binary combinations of those terms possible, or, disregarding the order of the terms, which is seldom important, there would be 12,500,000 combinations of different terms. Practically, such combinations are endless in variety, and yet in the process of compilation all of these 5,000 terms and 12,500,000 possible combinations must be reduced to the exact number of titles in the system selected. In the International Classification there are only 179 titles in the detailed form, and no classification much exceeds this number.

This process of condensation of medical terms under synonymous titles, or the selection of the true cause of death from several causes assigned by the physician, constitutes a large part of the practical work of a registration office in the treatment of causes of death. To be of value it must be under medical supervision, and yet, from the considerable amount of clerical labor involved, it is rare to find that a qualified medical statistician passes on each individual certificate of death. As a rule, certain principles and methods of procedure are established, and only exceptional cases are referred to expert judgment. Even if competent medical statisticians gave their personal attention to the assignment of each certificate of death compiled in the various offices, there would be numerous differences of practice, and consequent variations in the resulting statistics, unless a comprehensive system of treatment were adopted in all alike.

The adoption of such a system of assignment of individual single terms is the characteristic feature of the International Classification, which renders it superior for general adoption and the promotion of uniformity to any other system now in use. It gives the title to which each individual term is to be assigned. The question of assignment to one title or another, or the formation of new titles, is a proper subject for settlement at the regular decennial revisions, but between the revisions each term has a definite place in the classification, and all offices using the classification put it there. For the use of other systems there is no authoritative guide. A registration office in this country that undertook to employ the English registrar-general's classification might do so, so far as outward form was concerned, but *there would be no assurance* that the terms received from physicians' certificates were assigned as the registrar-general would assign them. Each office would be a law unto itself, just as in the old days before the adoption of uniform methods under the international classification.

For the treatment of *jointly-returned causes of death* no systematic method applicable to all classes of returns has as yet been introduced. It is usual in statistical offices to keep a book of practice showing decisions in such cases, and in time precedents may be collected showing the assignments of the most common causes when returned together. Attention was called to the importance of the subject by Würzburger at the session of the International Commission at Paris, and a tabular arrangement showing the preferences to be given individual titles of the classification was appended to the report of the Commission by Dr. Bertillon. This method, however, deals only with the definite titles, not with the numerous terms of varying degrees of accuracy included under the titles, and the judgment of the statistician would often be required as to whether the relative assignments of certain titles should govern the assignments of certain terms included. Many cases, moreover, including some of the most difficult, and practically all of the terms embraced under general or residual titles, are left to unguided individual decision.

Consideration of the difficulties attending this class of decisions and analysis of the process by which a final judgment was usually arrived at have suggested another plan for the systematic treatment of jointly-returned causes, and one which, in addition, seems adapted to the thorough revision of the international classification so that it will most fully meet the wishes of all of its users. This plan is set forth in a circular[1] of the Committee of the American Public Health Association on Demography and Statistics in Their Sanitary Relations.

When a death is returned from two causes, e. g., typhoid fever and valvular disease of the heart, one of these terms must be selected. The death can not be compiled under both typhoid fever and organic heart disease—at least it can not in any present system of classification. Which shall be chosen? Which title will best represent this case in the compiled statistical tables? Which will best serve the purposes of the users of the statistics?

When the terms, as in the example above, are exactly the same as, or fully equivalent to, the titles of the classification, then the question resolves itself into: "Which title is more important?" Different answers may be given to such a question. The sanitarian, regarding typhoid fever as a dangerous communicable disease, and interested in its prevention, wants to know the exact number of deaths from this disease. He cares nothing about organic heart disease, relatively, but says at once: "Put it under typhoid fever." The actuary or medical director of a life insurance company, dealing with such a return, might consider the statement of heart disease the more important. As a matter of fact, the individual might not have succumbed from typhoid fever if the heart had not been affected, and might have lived for many years with the heart affection but for the intercurrent attack of typhoid fever. The clinician, the pathologist, the sanitarian, the actuary—each may have a different opinion. It is the duty of the vital statistician to endeavor to satisfy the wishes of all, as far as possible, and for that purpose it is necessary to ask for the opinion of each class of users of mortality statistics. Such opinions to be available for use must be comparable, and the most obvious way of attaining this object was to ask for numerical answers. "What would you rate the importance of each title on a definite scale, say from 0 to 10?" Then the more important title, as numerically rated for general purposes, should be preferred, no data as to relative duration, primary or secondary occurrence, etc., being available to modify such judgment.

In a similar case, suppose the return to have been "continued fever" and valvular heart disease. Now, "continued fever," stated alone, is compiled under typhoid fever, but there is some uncertainty about it. It can not be considered as fully equivalent to this title. The registrar in estimating its value as compared with the other cause assigned, necessarily considers this fact, and may decide that a doubtful statement of typhoid fever is less satisfactory for compilation than a positive one of organic heart disease. In other words, we consider two factors in deciding every case of independent joint causes, first, the relative importance of the titles to which the terms would be assigned, and second, the validity of the terms as more or less certainly belonging under the titles selected.

Both of these factors are capable of numerical rating on the decimal or other scale. Having rated the importance of each title, and also the validity of each term as related to its title assigned, then the product of these numbers will give a general weighting number or combining number for each term returned on a certificate of death, by means of which the preference to be given in classification, i. e., assignment to titles, is definitely indicated. Provision would necessarily be made for equal rates, but a very large proportion of cases would be decided directly by the combining numbers.

A very practical advantage of such a system is that the combining numbers or weights could be readily inserted in an ordinary index of causes, as in that of the Census Manual, without increasing its length by a single page, and that the decisions between any two out of, say 5,000 terms, could be instantly found. Many millions of separate decisions would be thus condensed, which, expressed in any other way, would require many pages to record, and would be a vast, perhaps insuperable labor to frame. And the principle of each individual decision, as made between two independent terms coming before the registrar, would be precisely the same as that derived from his previously recorded numerical judgment, as expressed in a rating.

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[1] The circular was presented in connection with this paper, together with some preliminary ratings of titles of the International *Classification obtained* under it, which showed the usefulness and entire practicability of the system proposed. For copy of the circular, the special blank, with instructions, prepared for rating the titles of the classification and other information inquiry should be addressed to Mr. W. A. King, Chief Statistician of the U. S. Census, Washington, D. C., who is chairman of the American Public Health Association's committee.

It is not my intention to urge that the classification of causes of death shall be an entirely mechanical process. To accomplish the best results it must necessarily be conducted under medical direction, and first-hand examination of the original certificates will often disclose valuable suggestions as to the true place of the return in classification. Nevertheless, the most accomplished medical statistician will find cases where his judgment is uncertain, or where, at different times, he may make contrary decisions. A series of rating numbers would then be most useful, and would tend to unify practice. For many offices, however, where the compilation of data is left more or less entirely to clerks who do not possess medical qualifications, the plain and explicit directions available by means of the ratings would be invaluable.

The advantages of such a system for the criticism and revision of the classification are obvious. With each title and each constituent term assigned a definite value in the opinions of the chief users of statistics, it would be merely necessary to lop off titles of little consequence, and to exclude terms of very uncertain validity under the titles to greatly improve the precision and usefulness of the system. In some cases titles of slight precision would have to be retained on account of the large number of returns received under them, but their low value would be forcibly called to attention, and, in time, the physicians might be brought to avoid them. Indefinite terms that now vitiate the statistics of certain causes would be thrown out by this process of sifting, and a thoroughly revised and renovated classification would be the result. It is physically impossible for a commission to consider all of the points that require attention in an ordinary session of a few days, but with the concrete opinion of registrars, clinicians, pathologists, sanitarians and other classes of users of mortality statistics, definitely expressed in advance and capable of numerical analysis, the work of revision should be most complete and satisfactory.

At present all classifications are lumbered to some extent with useless titles. These are titles of little precision, of rare occurrence, or divided more minutely than the accuracy of returns will warrant. On the other hand, some diseases of great importance are lumped together without reference to the very important clinical, pathologic and etiologic distinctions that should be observed. It might be possible, by eliminating titles of small consequence, to obtain statistics of the causes of death of first importance, in all their necessary details, and also to add a selected list of the most important combinations of causes, without exceeding the usual limit of registration reports.

What is needed at the present time is a full expression of opinion on the practical matters relating to the statistical presentation of causes of death from the entire medical profession. The public health workers have begun the task, because the collection and publication of vital statistics is usually a part of the duties devolving upon sanitary administrations, and the preliminary announcement from the committee of the American Public Health Association, indorsed by the committee of the Conference of State and Provincial Boards of Health of North America, shows how the matter has been gone about. Sanitarians and vital statisticians alone can not make this movement a complete success. The interest and help of the entire profession are necessary adjuncts. The clinician, whether practicing in city or country, whether a teacher in a medical school or a private observer, should render aid. The pathologist should consider the questions involved from his point of view. Men devoted to special branches of medicine, as pediatrics, gynecology, surgery, obstetrics, etc., should give the benefit of their experience. The aid of the various special societies should be obtained, and also, through the coöperation of the state societies, with their constituent county organizations, the friendly feeling and interest of the entire medical profession of the country should be secured for this movement to improve the accuracy and usefulness of mortality statistics. Naturally, with this object in view, we come to the American Medical Association, and one of the purposes of the presentation of this paper is to ask the practical coöperation of the Association, by means of a special committee on vital statistics, with the corresponding committees already organized by the American Public Health Association and by the Conference of State and Provincial Boards of Health.

Many years ago a very able committee was appointed by this Association charged with the duty of "preparing a uniform plan for registration reports of births, marriages and deaths; including a nomenclature and classification of causes of death." Members of this committee were Drs. Edward Jarvis, W. L. Sutton, Wilson Jewell, Edwin M. Snow and R. W. Gibbes, and very able reports were presented to the Association at the sessions of 1858 and 1859. The intervention of the Civil War prevented the continuance of their work, and we are just beginning to be ready to-day, after over forty years, to carry out the principles of uniform and effective registration laws and uniform and comparable presentation of statistical data, especially relative to causes of death, that these pioneers of registration work so zealously advocated at that time. We now have the immense advantage of a permanently organized Census Office representing the Federal Government, and prepared to coöperate, and now effectively coöperating with the state and municipal registration offices and with the committees of those organizations that have undertaken to aid in this work. We now have the great additional advantage of a more thoroughly organized and united medical profession, and by its aid, under the auspices of the American Medical Association, these desirable reforms can be rapidly brought to accomplishment. It is time that a committee was again organized by the Association for this purpose, and I trust that your recommendation will be heartily given for this purpose.

DISCUSSION.

Dr. J. S. Fulton, Baltimore—The situation in America was never more hopeful than it is at the present time. We have a Census Bureau, which is a permanent organization. We have an energetic and (I think I may say) an enthusiastic committee working along these lines; and it certainly seems reasonable to hope that we shall, in the course of a few years, reach the individual contributors to the statistics, the physicians who make out the certificates on which the statistics are based.

It is a great pity that our classification must be mechanical. The mathematics of the subject, as Dr. Wilbur says, very clearly show that we can only have a certain number of places for distribution of the causes of death. That necessitates the absolute loss, from certain columns of mortality, of an indefinite number of causes leading to death, and perhaps introduces inevitable error, since we who are the statisticians compiling these data are rather impressed with our own side of the question of assigning position to certificates of death. It was an excellent idea in the Census Bureau to address inquiries to a great many men in the leading specialties in medicine, asking them to express opinions or give definitions of the various titles in the *international classification*. I think in that way we can eliminate our own particular bias; or, if we can not eliminate it, we can minimize its error so as to make it of little practical importance.

I received one of these inquiry sheets, of which this is a printed copy, is it not, Dr. Wilbur?

Dr. Wilbur—No; that is an average rating from a study of a number of those sheets, representing the average opinion of a certain number of statisticians and sanitarians; merely a preliminary study for the purposes of this meeting.

Dr. Fulton—I received such a sheet, asking me to give a rating to each of the titles. I went into it with care, as a man interested in the subject and as a specialist. After I was done I found my mind in exactly the condition in which Dr. Wilbur tells us the minds of so many medical men of the country are. After going over the entire list and reviewing it I found much in my own notes to criticise. Desiring to satisfy myself, I drew a second column, and put down an alternate series of ratings, and I found that in all important titles—the very definite diseases—I had no inclination to change the rating at all. There were a number of titles as to which I was inclined to very slightly increase or diminish my first rating. There were a considerable number of rather indefinite titles to which, on second consideration, I gave a rating very different from that which I had given at first. I was greatly interested in hearing Dr. Wilbur say that such was about the state of mind of other men.

I confess that I don't understand how Dr. Wilbur is going to make this mathematical basis of assignment available for clerks. I am inclined to believe that he will work it out in some practical way, although at present, as I say, I don't understand it. What I do understand very clearly, however, is that this work is going to be available for a successful revision of our classification every ten years. Such careful study year after year will enable us to take very definite and complete data to the next decennial revision. For this purpose I feel assured that the great practical utility is coming out of this part of the work; for the other I am hopeful, though I confess I don't understand it at present.

Dr. G. T. Swarts, Providence, R. I.—My feelings are precisely those stated by Dr. Fulton. When I commenced to express my opinion in figures in regard to the comparative valuation of these different diseases, I found myself somewhat in a quandary. After making my rating the question was whether it was satisfactory to me. I think the result will be that we will have to take the average, as was done in this acceptance of nomenclature classification. I am not satisfied with the classification at all. There are a great many subjects of importance left out, and a great many causes I don't agree with. Nevertheless, I am willing to let my personal opinion go, so that when the statistician finds some reports from one state and some from another, he will know that they are all classified from the same standpoint.

I am willing to submit my figures to what the Census Bureau finds is a proper average. Whether it will prove satisfactory or not, seems ambiguous to me at present, but surely, in the course of ten years, we ought to get to some point where we can understand the subject. It must be, however, thoroughly threshed out in the meanwhile.

Salt and Molasses for Cancer.—Salt as a cure for cancer is announced from India in the lay press, and an Australian physician has found molasses to be a sure cure. Salt and molasses have, at least, the valuable points of cheapness and simplicity.

THE PROPER PERINEAL PROSTATECTOMY INCISION.

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CHICAGO.

Prostatectomy is the operation which is now attracting much attention among surgeons here and abroad. The more general adoption of this operation is comparatively of recent date. The necessity of the removal of the enlarged prostate gland, the most frequent cause of urinary obstruction in men advanced in years, has been recognized for a long time, but it was not until recently that the technic of the operation has been perfected to a degree that rendered it sufficiently safe to bring it within the scope of feasible and advisable surgical procedures. The literature on this subject is growing with astonishing rapidity. Individual and collective experiences are being published in the medical press at short intervals in bringing to the notice of the profession the different operative procedures which are being devised and practiced. The question as to the most feasible route by which to attach the diseased prostate has not been definitely settled. The suprapubic method has many weighty advocates, and for a time was deemed the easiest, most efficient and safest. The perineal route has, however, been given a more extended trial, and a very large experience appears to have decided in its favor. From an anatomic standpoint the perineal operation is certainly the most rational of the two, and will undoubtedly survive the test of time. The removal of the enlarged prostate does not always meet all the indications in the case operated on. Few cases come to the surgeon in which the bladder is intact in consequence of the mechanical obstruction or infection, hence in the majority of cases it becomes necessary to establish free drainage after the removal of the prostate for the purpose of initiating a successful treatment for the coexisting complications. In making the external incision the surgeon must therefore have in view the exposure of the prostate to sight and touch as freely as can be done with safety, and to provide for free drainage of the bladder and the perineal wound. The semilunar incision of Zuckerkandl and the triangular incision of Kocher accomplish neither of these objects to the fullest extent. I have given both of them a fair test and have become familiar with their shortcomings in securing the necessary room and the difficulty encountered in establishing free and efficient drainage for the bladder and perineal wound. The triangular incision of Kocher circumscribes a long wedge-shaped flap, the apex of which is liable to slough, and the curved incision of Zuckerkandl does not procure the necessary amount of room through which the prostate, in difficult cases, can be removed with the requisite degree of precision and safety, and both incisions leave a wound difficult to drain efficiently. The median incision so much praised by some surgeons is altogether inadequate in difficult cases. Every surgeon who has had an extensive experience in perineal prostatectomy has learned that not all enlarged prostates can be removed by enucleation. There are cases in which the diseased organ must be removed by morcellement. It is a rule in surgery which it is always well to bear in mind, and that is to operate as little as possible in the dark in important anatomic localities, and this rule applies with special force to perineal prostatectomy. In obese subjects and in cases of very large prostates it is often exceedingly difficult to bring the parts to be removed within reach of the index finger. It is under these trying circumstances that the operator will appreciate the advantages of an incision that will expose the prostate freely and bring it within easy reach of the finger or the instruments required for its removal. Very little is gained by attempts to render the prostate more accessible by intravesical instrumental pressure, and such efforts are by no means always harmless. The danger from

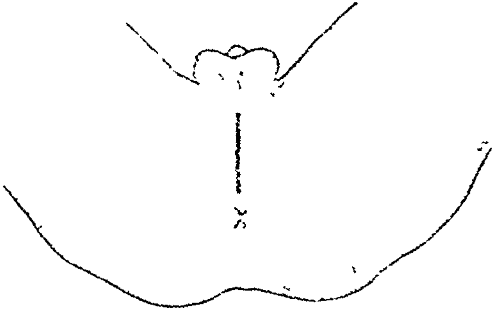

Fig 1—Median perineal incision

hemorrhage and accidental wounding of the peritoneum is reduced to a minimum by resorting to an incision that will expose the prostate in the freest possible manner to sight and touch. I have attempted to do this by combining the median incision with two lateral incisions representing in outline an inverted capital Y. The median incision is made in the usual way, laying bare the membranous portion of the urethra. The lateral incisions are carried from the lower angle of the median to a point half way between the anal margin and the tuberosity of the ischium, cutting through about the same structures as are involved in the lateral operation for stone in the bladder. The wound is next deepened largely by the use of blunt instruments and all hemorrhage arrested as it occurs, maintaining throughout the entire operation practically a bloodless field. This will give the operator an opportunity to recognize and identify the tissues as he proceeds with the dissection. In this comparatively bloodless way the rectum is detached until the membranous portion of the urethra and the lower segment of the prostate can be distinctly seen and felt in the apex of the deep triangular wound. By using narrow flat deep retractors the rectum is pushed backward and the wound margins are retracted laterally, thus exposing freely the parts concerned in the next step of the operation. I then proceed as follows: On a grooved staff which is now inserted into the bladder the membranous portion of the urethra is incised and the grooved director of Wheelhouse inserted into the bladder. Withdrawing the staff and using the director as a guide the prostatic part of the urethra is dilated with the left index finger which, after it enters the bladder, serves as a blunt hook with which the prostate is drawn gently downward and forward into the wound. The capsule of the gland is next incised transversely and with the opposite index finger enucleation of the left lobe is commenced. This part of the operation is usually easy, sometimes difficult and not infrequently impossible. Recklessness and undue violence are to be carefully avoided. Enucleation is often facilitated by grasping the lower part of the prostate with my bullet forceps or some other grasping instrument on which traction is made during the process of enucleation. I seldom attempt to remove the prostate in its entirety. Occasionally this can be done, but usually it will be f ch easier to remove only one l time

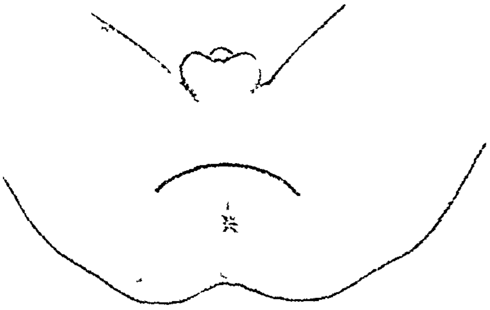

Fig 2—Zuckerkandl's incision

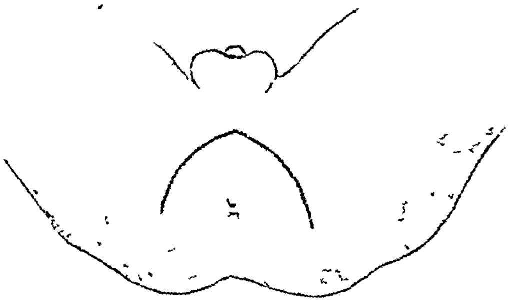

Fig 3—Kocher's incision

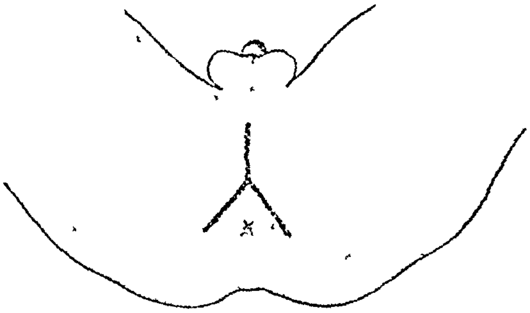

Fig 4—Author's incision

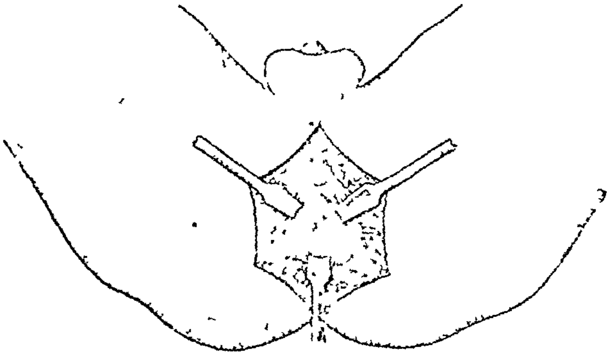

Fig 5—Prostate and membranous portion of urethra seen on retraction of wound margins

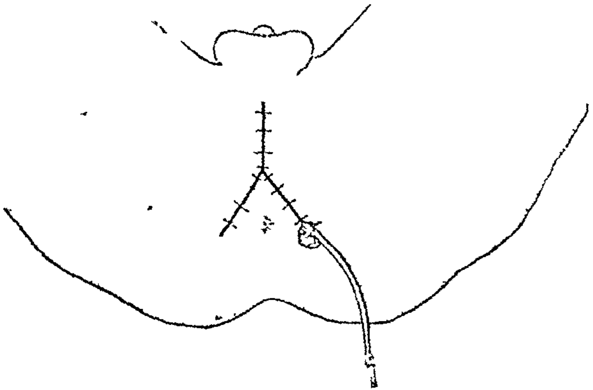

Fig 6—Operation completed

removal of the left lobe the right index finger is inserted into the bladder and the right lobe enucleated with the left. If it is found impracticable to remove the prostate by enucleation morcellement must be resorted to. The finger in the bladder is almost indispensable in operating by this method. With it the parts are brought within easier reach and it serves at the same time as a valuable guide for the use of the cutting and traction instruments. With grasping forceps portions of the gland are seized, when the necessary traction is made by an assistant while the surgeon does the cutting with blunt-pointed scissors well curved on the flat. Complete prostatectomy in such cases is not necessary, but enough tissue must be removed to insure a free outlet for the urine and to guard against a recurrence of obstruction from the same cause. I am decidedly in favor of a preliminary cystotomy in performing perineal prostatectomy, as it greatly facilitates the removal of the gland by enucleation or morcellement, and in the majority of cases it becomes a necessity for the treatment of complicating affections of the bladder. It is preferable to incise the urethra and take advantage of such an opening into the bladder during the operation than to tear it accidentally, as is so often done when operators undertake a perineal prostatectomy without a preliminary cystotomy. I invariably drain the bladder by inserting a soft rubber drain with two oval fenestra near the vesical end. The drain is fastened in the lower angle of one of the lateral incisions with a suture which includes the outer margin of the wound. The perineal wound is drained with a strip of iodoform gauze which is brought out on the side of the rubber drain. The balance of the incision is sutured. The bladder is kept practically empty by siphonage by connecting the perineal drain with another piece of rubber tubing, making the connection with a glass tube. Through this rubber drain the bladder can be washed out daily with appropriate antiseptic solutions. The iodoform gauze drain should remain for at least five or six days, as its presence in the wound is of the greatest value in preventing infection by leakage of septic urine. The bladder drainage must be continued until the condition of the urine is such as to warrant suspension of intravesical medication. In regard to the indications for prostatectomy history will repeat itself. Every new surgical procedure has had its enthusiastic advocates who championed extreme views and who would recognize no exceptions, and who followed a routine practice. I will refer only to a few operations of recent date that have had such a history. It is not long since thousands of ovaries were sacrificed under the belief that the anticipated climacteric period would correct all kinds of obscure nervous affections until sad experience proved the contrary. Craniectomy for microcephalus had a short but exciting career. It is impossible to estimate the number of healthy appendices that have been removed by surgeons who rely on pain in the right iliac fossa as a conclusive evidence of a diseased vermiform appendix, and resort to the knife as the only remedy. Castration for enlarged prostate has unsexed hundreds of men without yielding them an equivalent in relief for the loss sustained. Gall-bladder surgery has now a few extremists who affirm that it should be dealt with in the same medical manner as the appendix when it is the seat of disease. Instances could be multiplied, but the early history of the operations mentioned will suffice that new operations are very likely to be abused when first placed on trial, and prostatectomy can not escape a similar fate. It is impossible at the present time, so early in the history of this operation, to formulate the exact indications. The size of the prostate is no criterion to go by in deciding on the propriety or necessity of an operation as a large prostate may cause less disturbance of function of the bladder than one only moderately enlarged. The degree of obstruction depends more on the location of the enlargement and the effect of pressure on the urethra than the size of the swelling. Every prudent surgeon would hesitate to recommend a prostatectomy in men 70 to 80 years of age, the subjects of extensive atheromatous degeneration of the arteries or of organic disease of any of the important viscera. Systematic aseptic catheterization will not be displaced entirely by prostatectomy, and it will continue to be a most valuable resource in the future, as it has been in the past, in the treatment of hypertrophy of the prostate, more particularly in men advanced in years the subjects of degenerative diseases which in themselves would contraindicate the performance of any operation of importance except as an immediate life-saving procedure. It will be with this as with any other operative procedure that the best results will be obtained by surgeons who search as carefully for the negative as for the positive indications for the operation. The present technic of prostatectomy will be greatly improved, and its legitimate range of usefulness will be widened with increasing clinical experience and with a more definite knowledge of the etiology and pathology of senile hypertrophy of this gland.

THE ESSENTIAL PRINCIPLES OF INFANT FEEDING AND THE MODERN METHODS OF APPLYING THEM.

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(Concluded from p. 354.)

MILK LABORATORIES.

The next question is where and in what way the modification of the milk is to be carried out. This problem has been to a great extent solved since the establishment of what are termed milk laboratories. Up to the present time the milk laboratories have been under the control of one company called The Waker-Gordon Laboratory Company, which was established in Boston in 1891 by Mr. G. E. Gordon, Mr. Geo. H. Walker and Mr. J. H. Waterhouse. These milk laboratories are intended to take the same position toward the modification of milk that apothecary shops have to drugs. That is, directions for substitute feeding can be sent in the form of a prescription to the milk laboratory, and should only be dispensed and sold under the direction of a physician. It is well that this should be clearly understood, as it places the milk laboratories in the strong position which they have up to this time held by being endorsed by the physician and by giving the public to understand that they are merely a means by which physicians can accurately carry out their ideas as to the substitute feeding of their patients.

Emanating from Boston, laboratories have been established in this country in New York, Philadelphia, Chicago, Baltimore, Buffalo, Cincinnati, Cleveland, Grand Rapids, Pittsburg, St. Louis and Washington; in Canada in Montreal, Ottawa and Toronto, and in England in London. In connection with these laboratories are farms belonging to the Walker-Gordon Company and especially equipped for supplying the best milk for substitute feeding. The farms and the laboratories in this way are kept in close touch, and the important matter of a fresh milk supply is thus dealt with and carried as nearly to perfection as is possible under the existing conditions.

The materials which are needed to carry out the physician's prescriptions in these laboratories are:

1. Creams of different but definite fat percentages, obtained either by gravity or by centrifugal separation.
2. Fat-free milk, which is used to increase the percentage of proteids in the substitute food beyond that contributed by the cream.
3. Milk sugar to raise the percentage of the sugar above the amount contributed by the cream and the fat-free milk.
4. Lime-water to increase the alkalinity.
5. Boiled or distilled water as a diluent.
6. Cereal waters and jellies, usually of barley or oat meal, which in certain cases, if the physician prescribes it, can be used as a diluent, or, in the latter part of the first year, to provide the necessary element of starch.
7. Special apparatus for pasteurizing, sterilizing or heating the mixtures at any required temperature.

The milk supply from the farms connected with these laboratories is treated with such care that it shows a remarkably low bacterial content, so that it often can be transported for long distances without the necessity of pasteurization, sterilization or the addition of preservatives.

These laboratories established in the interest of substitute feeding are, then, simply places where milk, which has been obtained under the best conditions, is supplied, where physicians can send their prescriptions calling for any percentage of fat, sugar, proteids, alkalinity or anything else which is desirable, and where these prescriptions can be put up cleanly and accurately.

The following is the sample prescription blank which is at present used in the Walker-Gordon laboratories, and a sample prescription:

THE WALKER GORDON LABORATORY.

		Per cent.
R.	Fat	3 50
	Milk sugar	6.50
	Whey proteids	0.50
	Caseinogen	0.25
	Lime water	5.00

Heat at 155 F. Number of feedings, 8. Amount at each feeding, 4 oz. Ordered for......
Address.......... Date ....190 .
...., M.D.

Physicians who do not wish to subdivide the proteids may erase the words "whey" and "caseinogen," and simply write for the percentage of the total proteids desired. They may also write for as many ounces of cereal water or jelly in each tube as may be desired, the cereal being added in place of the water used in making the modification, so that the percentage of fat, sugar, and proteids are not materially altered.

By examining the prescription it will be seen that the substitute food is written for simply in percentages, and that by this method the physician does not have to calculate the various amounts of cream or separated milk or sugar or anything else which he may wish to have introduced into the food, these being calculated at the laboratory for him. The great advantage in using the laboratory methods for preparing a substitute food is not only the relative greater certainty of the purity and the freshness of the milk supply, but also that the percentages of the different elements of the milk and cream being known each day, the calculations for any especial percentages are more likely to be correct. We must not, however, expect, in the present state of our knowledge, when a prescription of certain percentages is written for, that these percentages in the resulting mixture will be absolutely correct. Practically, however, they have been shown to be reasonably accurate, and necessarily are more accurate than when the mixtures are prepared by other methods or in the patient's home. The following analyses of laboratory mixtures were made by Dr. Edsall of Philadelphia, who is well known as a skilled chemist, as well as a practical worker in the care of children.

The mixtures were calculated at and put up in the Walker-Gordon Milk Laboratory in Philadelphia.

TABLE 9.

Percentages as calculated by the laboratory.		Percentages in the same mixtures as estimated by chemical analysis by Dr. Edsall.	
Fat.	Proteids.	Fat.	Proteids.
1.5	.75	1.3	.822
1.5	.75	1.3	.8217
1.5	.75	1.4	.8217
1.5	.75	1.2	.7503
1.5	.75	1.3	.7140
1.5	.75	1.1	.8574
1.5	.75	1.45	.3217
1.50	.75	1.30(?)	
1.50	.75	1.50	.8574
1.50	.75	1.50	.9288
2.	1.25	2.2	1.2147
2.	1.25	1.9	1.2504
2.	1.25	1.9	1.2147
2.	1.25	2.4	1.2861
2.	1.25	1.6	1.036
2.	1.25	1.7	1.2147
2.	1.25	1.9	1.0717
2.50	1.50	2.4	1.2504
2.50	1.50	2.6	1.3801
2.5	1.50	2.6	1.2881
2.5	1.50	2.6	1.4038
2.5	1.50	2.2	1.143
2.5	1.50	2.6	1.3
3.5	1.75	3.55	1.6355
3.5	1.75	3.3	1.6335
3.5	1.75	3.3	1.544
3.5	1.75	3.28	2.2151
4.0	1.75	3.9	2.1794
4.0	1.75	4.2	1.544
4.0	1.75	3.3	1.536
4.0	1.75	3.8	1.7049
4.0	1.75	3.9	1.557
4.0	1.75	3.7	1.562

After the prescription has been made up at the laboratory by the laboratory modifying clerks the number of tubes required for the special substitute feeding, each tube containing the amount which the physician wishes the infant to have at one feeding, are placed in an ice box especially adapted for the purpose of transportation to the patient's home. On the following day, when the fresh supply is brought, the ice box and tubes of the previous day are taken back to the laboratory. The greatest care is taken not only to have practically sterile tubes go out from the laboratory, but when the empty tubes are returned, to thoroughly sterilize them before they are brought into the modifying room.

Although an accurate composition of a substitute food can be better obtained in a laboratory than anywhere else, yet there arise cases in which a laboratory can not be conveniently reached, or in which for some special reason, the physician or the patient prefers to make the substitute food at home. We must remember, however, that many children are fed in a satisfactory manner from laboratories at a great distance from their homes. Thus, before the establishment of the Chicago laboratory the New York laboratory supplied a number of cases in Chicago. In the same way the Boston laboratories have sent, even during the hot weather, food to different parts of Maine, and the southern states have been supplied from the Washington laboratory. It is quite common for the laboratories to supply food for long ocean voyages, and the laboratory methods have been found to be remarkably successful in this part of the work. As to the relative expense incurred in feeding from the laboratory, or from mixing the food at home, there is not a very great deal of difference, especially if good milks and creams of different percentages are provided for what is usually known as home modification.

The general principles for modifying milk are the same whether the milk is modified in the laboratory with carefully protected milk, and by skilled hands, or in the homes from whatever milk the individual is able to obtain and by hands as skilled as possible in the special household. The physician must, therefore, in making use of home modification adapt his methods as nearly as possible to those which are employed in the laboratories. This implies the careful choosing of a herd of cows, as clean and fresh milk as possible, and a reasonable certainty as to the strength of the cream used.

HOME MODIFICATION.

The chief difficulty associated with the home modification of milk lies in the uncertainty in regard to the percentages of the materials with which we are working. If creams of guaranteed strength can be purchased from the laboratories or similar places, a home modification may be made with a considerable degree of accuracy. On the other hand, if we are dependent on the use of gravity cream obtained from milk of uncertain composition, the strength of the cream can only be approximately estimated. We may, however, assume that a quart of milk which contains 4 per cent. of fat to start with, and which has been allowed to stand for a varying number of hours, will yield approximately the following percentages of fat in the different layers of milk:

TABLE 10.

Cream, 10 per cent. in the upper 8 ounces after 6 hours.
Cream, 10 per cent. in the upper 11 ounces after 8 to 12 hours.
Cream, 12 per cent. in the upper 8 ounces after 8 hours.
Cream, 16 per cent. in the upper 6 ounces after 8 hours.
Cream, 20 per cent. in the upper 4 ounces after 4 to 6 hours.

Milk containing practically no fat, or, as it is called, "fat-free milk," can be obtained from the lowest eight ounces of a quart of milk which has been set for eight or more hours. The other materials used in modification, that is, lime-water, distilled or boiled water and milk-sugar, can be easily provided.

Having on hand the materials for the modification, the next point consists in making the calculation for the different amounts of each material to be used in order to obtain the desired percentages of fat, sugar and proteids in the resulting mixture. These calculations may be made either by means of formulæ such as have been published by Taylor, Baner and Westcott, or they may be obtained by the feeding-card presently to be described.

If formulæ are to be used, it is essential that we should adopt a standard for the analysis of the different materials used, and the standard which is now most generally accepted may be stated as follows:

TABLE 11.

	Fats.	Sugar.	Proteids.
Fat-free milk	Trace.	4.60	3.60
Whey	Trace.	4.79	1.00
Whole milk	4	4.50	3.50
Eight per cent. cream	8	4.40	3.40
Ten per cent. cream	10	4.30	3.35
Twelve per cent. cream	12	4.20	3.30
Sixteen per cent. cream	16	4.05	3.20
Twenty per cent. cream	20	3.90	3.10

FORMULÆ FOR MILK MODIFICATION.

The most complete series of formulæ for the modification of milk which has yet been published is that of Dr. Thompson S. Westcott of Philadelphia, which was published in the International Clinics, October, 1901. Taking the previous formulæ of Taylor and those of Baner, he has worked out mathematical formulæ which are of universal application, and has established the principles of percentage modification on a truly scientific basis.

The formulæ which he gives are rather too elaborate to be given in this paper. For the sake of completeness, however, it may be well to give the formulæ for obtaining the desired combinations based upon the use of creams and fat-free milk. The use of creams and fat-free milk, instead of the use of cream and whole milk, simplifies very greatly the work of computation, as may readily be seen by referring to Westcott's paper. Moreover, it is a more economical method, as the fat-free milk may be obtained from the same quart from which the cream is separated. The formulæ may briefly be expressed as follows:

TABLE 12.

F.=prescribed percentage of fat.
S.=prescribed percentage of sugar.
P.=prescribed percentage of proteids.
C.=total quantity of cream in ounces.
M.=total quantity of milk in ounces.
W.=total quantity of water in ounces.
L.=total quantity of dry milk sugar in ounces.
Q.=total quantity of mixture.
a =known percentage of fat in cream.
a′=known percentage of fat in milk.
b =known percentage of proteids in cream.
b′=known percentage of proteids in milk.

The amount of cream to be used is;

$$\text{Cream (C)} = \frac{QF}{a}$$

The amount of fat-free milk to be used is:

$$\text{Fat-free milk (M)} = \frac{QP - bC}{b'}$$

The amount of sugar is:

$$\text{Sugar (L)} = \frac{QS - 4.50\ (M+C)}{100}$$

which gives the amount of sugar in ounces.
The amount of water to be added is:

$$\text{Water (W)} = Q - (C + M).$$

A comparatively unimportant error arises in the calculation of the sugar by the assumption that the percentage of sugar in the mixture of fat-free milk and cream is the same as that in whole milk, that is, 4.50 per cent.

To many physicians, however, the use of a formula is more or less inconvenient, both because of the time required to make the computation and because of the difficulty which some minds experience in using algebraic formulæ. In order to simplify the work of calculation, a very practical and simple method has been devised by Dr. Maynard Ladd, a member of the pediatric department at Harvard University.

DR. LADD'S CARD FOR HOME MODIFICATION.

This method consists of a card small enough to be carried conveniently in the pocket and on which are given thirty different combinations of fat, sugar and total proteids with the amounts in ounces of cream, fat-free milk, lime-water, boiled water and milk-sugar to be used in obtaining these combinations.

By referring to this card it is seen that it is so arranged that a physician may exercise a choice in the percentage of cream to be used, and can see at a glance what combinations are possible and what combinations impossible with the creams of different strengths. The calculations are made for twenty-ounce mixtures. For twenty-five ounce mixtures the amount of each ingredient is multiplied by 1¼. For a thirty-five ounce mixture the amount of each ingredient is multiplied by 1¾ and for a forty-ounce mixture the amount of each ingredient is multiplied by 2. The percentage of lime-water may be increased at will, by remembering that each additional ounce in a twenty-ounce mixture increases the alkalinity 5 per cent., and the amount of lime-water added beyond what is given in the total amount must be subtracted from the amount of water used as a diluent. For accuracy the milk-sugar should be dissolved in a portion of the water, and then enough water added to make the amount called for. The amount of sugar required is expressed in measures; the measure is a small tin dipper obtained at the milk laboratory, and holds just 3⅜ drams, which is approximately a level tablespoonful.

Table 13.

No.	℞. 20-oz. Mixtures. Percentage of Fat.	Sugar.	Prot'd.	Alk.	Ounces of Cream. 10%	12%	16%	20%	Ozs. Fat Free Milk Used with Creams of 10%	12%	16%	20%	Ounces Lm. Wtr.	Bld. Wtr.	Milk Sugar. meas.	Sugar % without dry sugar
1	1.50	4.50	0.25	5	*	*	*	1½	*	*	*	0	1	17½	2	0.33
2	1.50	4.50	0.50	5	3	2½	2	1½	0	½	1	1½	1	16	2	0.61
3	2.00	5.00	0.25	5	*	*	*	2	*	*	*	0	1	17	2¼	0.75
4	2.00	5.00	0.50	5	*	3¼	2½	2	*	0	½	1	1	15¾	2¼	0.73
5	2.00	5.00	0.75	5	4	3¼	2½	2	¾	1½	2¼	2¾	1	14½	2	1.01
6	2.00	5.50	1.00	5	4	3¼	2½	2	1¾	2½	3¼	3¾	1	13¼	2¼	1.30
7	2.50	5.00	0.50	5	*	*	3¼	2½	*	*	0	¾	1	15¾	2¼	0.73
8	2.50	5.50	0.75	5	*	4¼	3¼	2½	*	¼	1¼	2	1	14½	2¼	1.01
9	2.50	6.00	1.00	5	5	4¼	3¼	2½	1	1¾	2¾	3½	1	13½	2½	1.23
10	3.00	6.00	0.50	5	*	*	3¾	3	*	*	0	¾	1	15¼	2½	0.84
11	3.00	6.00	0.75	5	*	5	3¾	3	*	0	1¼	2	1	14	2½	1.12
12	3.00	6.00	1.00	5	6	5	3¾	3	0	1	2¼	3	1	13	2¼	1.35
13	3.00	6.00	1.25	5	6	5	3¾	3	1¼	2¼	3½	4¼	1	11¾	2¼	1.35
14	3.00	6.50	1.50	5	6	5	3¾	3	2½	3½	4¾	5½	1	10½	2¼	1.01
15	3.00	6.50	2.00	5	6	5	3¾	3	5½	6½	7¾	8½	1	7½	2	2.08
16	3.50	6.00	0.50	5	*	*	*	3½	*	*	*	0	1	15½	2½	0.78
17	3.50	6.00	0.75	5	*	*	4½	3½	*	*	0	1	1	14½	2½	1.01
18	3.50	6.50	1.00	5	*	5¾	4½	3½	*	0	1¼	2¼	1	13¼	2½	1.26
19	3.50	6.50	1.25	5	7	5¾	4½	3½	½	1¾	3	4	1	11½	2½	1.08
20	3.50	6.50	1.50	5	7	5¾	4½	3½	2	3¼	4½	5½	1	10	2¼	2.02
21	4.00	6.00	0.60	5	*	*	*	4	*	*	*	0	1	15	2½	0.78
22	4.00	6.00	0.75	5	*	*	5	4	*	*	0	1	1	14	2½	1.12
23	4.00	7.00	1.00	5	*	*	5	4	*	*	1	2	1	13	2¾	1.35
24	4.00	7.00	1.25	5	*	6¾	5	4	*	¾	2½	3½	1	11½	2½	1.08
25	4.00	7.00	1.50	5	8	6¾	5	4	1	2¼	4	5	1	10	2½	2.02
26	4.00	7.00	2.00	5	8	6¾	5	4	3½	4¾	6½	7½	1	7½	2¼	2.56
27	4.00	7.00	2.50	5	8	6¾	5	4	6¼	7½	9¼	10¼	1	4¾	2	3.20
28	4.00	7.00	3.00	5	8	6¾	5	4	9¼	10½	12¼	13¼	1	1¾	1½	3.88
29	4.00	6.00	3.00	5	8	6¾	5	4	9¼	10½	12¼	13¼	1	1¾	1	3.88
30	4.00	5.50	3.00	5	8	6¾	5	4	9¼	10½	12¼	13¼	1	1¾	¾	3.88

For 25-oz. mixt. each ingredient by 1¼
For 30-oz. each ingredient by 1½
For 35-oz. each ingredient by 1¾
For 40-oz. each ingredient by 2
For 45-oz. each ingredient by 2¼

* Combination impossible with strength of cream indicated.

The following is an example of the way in which this card may be used: Suppose that it is desired to give a baby a mixture calling for a 4 per cent. fat, 7 per cent. sugar, 1.25 per cent. proteids, 5 per cent. alkalinity, and five feedings of eight ounces. By referring to the table it will be seen that this corresponds to formula 24. Looking into the cream column we see that it is impossible to obtain this combination with a cream of 10 per cent. fat, but it may be obtained with a cream of 12 per cent. fat. As forty ounces of milk are to be given the baby in the course of twenty-four hours, it will be necessary to double the quantity of each ingredient, and the calculation is readily made as follows:

Table 14.

12 per cent. cream	6¾ ounces	x 2 = 13½	ounces.
Fat-free milk	¾ "	x 2 = 1½	"
Lime water	1 "	x 2 = 2	"
Boiled water	11½ "	x 2 = 23	"
Milk sugar	2½ measures	x 2 = 5	measures.

The mother is then told how to obtain a cream of 12 per cent. strength, following the rules given above. By referring to the table of creams it will be seen that a cream of 12 per cent. may be obtained from the upper eight ounces of a quart of milk which has been allowed to set in a cool place for eight hours. The mother may be directed either to siphon off this cream, or to remove it by means of a dipper, or she may pour off the top eight ounces into a graduate. Two quarts of milk will be necessary to obtain the amount of cream necessary for this modification. The fat-free milk is obtained from the lowest eight ounces of the quart from which the cream has been removed. The ingredients are mixed and five nursing bottles are then filled, each with five ounces of milk, stoppered with cotton, and then pasteurized or not, as the physician chooses to direct.

Whey-cream mixtures may be obtained by using whey as a diluent, in place of the boiled water, preferably in the combinations containing low proteid percentages. Each two ounces of whey replacing an equal quantity of water in a twenty-ounce mixture will raise the whey-proteids, 0.10 per cent., and will increase the sugar percentage 0.50. The total sugar percentage is therefore, the amount contributed by the cream and fat-free milk, which is indicated in the last column of table 13, plus that of the whey. The amount of dry sugar which must be added to make the desired final sugar percentage can be easily calculated by referring to the following table.

Table 15.

	Per cent. of sugar.
One measure of dry lactose in a 20-oz. mixture gives	2.00
One-half measure of dry lactose in a 20-oz. mixture gives	1.00
One-quarter measure of dry lactose in a 20-oz. mixture gives	.50

(One measure is approximately one level tablespoonful.)

Example: If in formula 21 of Dr. Ladd's card, fourteen ounces of whey are added in place of the same quantity of water, the whey-proteids are increased 0.70 per cent., making total proteids of 1.30 per cent. The sugar contributed by the cream is 0.78; that by the whey 3.50—making a total of 4.28. The desired percentage of sugar is 6, therefore the balance of 1.72 per cent. may be obtained by adding a little short of the measure of sugar.

Whey should be made of fresh fat-free milk and liquid rennet, and should be heated to 150 F. (65 C.) to destroy the rennin enzyme before it is added to the cream mixture. One quart of fat-free milk will yield about twenty-four ounces of whey.

EDSALL'S COMPARATIVE ANALYSES.

Dr. Edsall of Philadelphia has carefully estimated the percentages of the fat and proteids where the mixtures have been prepared by means of formulæ in the hospital, by trained nurses, at the out-patient department of the University of Pennsylvania, and by a number of physicians. The results under these conditions were not so good as when the modifications were done in the laboratory. Dr. Edsall has also carefully estimated mixtures that have been put up according to the figures on Dr. Ladd's card, and has found that the results were very accurate, approaching closely those of the laboratory modifications. It would seem, therefore, that the laboratory modifications are best if they can be obtained, but that if home modification is to be used, the method suggested by Dr. Ladd will probably give the most accurate and successful results.

GENERAL PRINCIPLES OF PERCENTAGE FEEDING.

Having described the general principles of modifying milk and explained the various methods whether by laboratory modification or home modification by special formulæ, or by the feeding card, it may be well for me to say a few words about the general principles of percentage feeding.

This system of percentage feeding has been so much more elaborated in America than elsewhere that it is often spoken of as the American method. It simply means that each individual infant must be studied by itself; that its special idiosyncrasies must be allowed for, and that its food should be adapted to its age, weight and other conditions, whether normal or abnormal. This seems to be the most rational manner of approaching the subject, and, although there are many factors of the problem which have not yet been entirely solved, yet the principle having been determined, greater accuracy will necessarily follow the continuous investigation of the subject.

So far as the materials of the food are concerned, we conclude that it is practical to use cow's milk for a substitute food, and that the milk should be from cows of hardy breeds, such as Durham, Devon, Ayrshire and Holstein. These grades are noted for their constitutional vigor, adaptability to acclimatization, notable ability to raise their young, freedom from intense inbreeding, a distinctly emulsified fat in the milk, and a preponderance in the fats of the fixed over the volatile glycerids.

In regard to the heating of the milk, the temperature should vary according to the especial conditions. Where whey is used to obtain a definite percentage of the whey-proteids, a temperature sufficient to kill the rennin enzyme, used in obtaining the whey, and not so high as to coagulate the whey-proteids, should be employed. An intermediate temperature of 155 F. (68.3 C.) meets this condition.

In hot weather, and when the distance for transportation is great, also in diarrheal diseases, it is sometimes found desirable to heat the milk to a much higher temperature, such as 212 F. (100 C.). It may be said, however, that with the present care which is taken to preserve the milk used for laboratory purposes, it has been found that either sterilization or pasteurization is often unnecessary.

In regard to the reaction, a slightly alkaline reaction seems to accomplish the most favorable results. The lime-water does not appear in itself to interfere with the infant's digestion. Care should be taken, however, when a large percentage of lime-water is added to the milk, such as 15 or 20 per cent., that it should be added just before the milk is given if it is decided to heat the food at a high temperature, such as 212 F. (100 C.). This precaution is taken because if the lime-water and milk-sugar are heated together at a high temperature a reaction takes place seemingly between the lime-water and the milk-sugar, with a resulting discoloration of the milk.

In regard to the percentages which should be given under different conditions, you may perhaps wish to know what my custom has been. We may divide all feeding cases into two broad classes, one in which the infant is normal for its age, both in digestion and nutrition, and a second class in which there is some disturbance in the digestion and nutrition of the infant.

The feeding in the first class of cases, in which the infant is normal at birth, presents very few difficulties, as a rule, when the case is intelligently managed. It is necessary, however, to bear in mind that even a normal infant can not be started at once on a modified milk, corresponding in its percentages to human milk. It is a cardinal principle in the feeding of both healthy and sick infants, to start with weak milks and gradually to strengthen one element after another until the child is taking a milk of full strength. The rapidity with which this can be accomplished will depend largely on the idiosyncrasy of the infant. In some cases we are surprised at the strength of the food which the child can digest, in other cases the progress from a very weak to a very strong milk can only be made slowly and with caution.

In a general way it has been my experience that the fats should be from 1.5 to 2 per cent. during the first week, and from 2 to 2.5 per cent. in the second and third weeks. By the end of the month the infant should be taking from 3 to 3.5 per cent. of fat. Four per cent. of fat should be reached anywhere from the sixth week to the sixth month.

The sugar percentage can be pushed up rapidly, beginning with 5 per cent., and by the end of a month in most cases we can give 7 per cent. It is rarely necessary to go higher.

The proteids present the greatest difficulty, and as a rule must be increased very gradually, beginning with a total percentage as low as 0.50, and preferably in young infants using the splitting the proteid so as to give 0.25 whey-proteids and 0.25 caseinogen. This will suffice for the first week or two. At the end of a month the infant is usually taking 1 per cent.; at the end of the second or third month 1.25 to 1.50 per cent., and from the fourth to the fifth month about 2.00 per cent. The full total proteid of 3.50 is rarely tolerated before the tenth or twelfth month. At any time when necessary or desired the various combinations of the split-proteid can be used instead of the undivided proteid.

Table 16 summarizes what has just been said, giving the formulæ, according to the feeding-card on which the average healthy baby may be started.

TABLE 16.

Premature	No. 1 or 2
2-4 weeks	No. 5, 8, 9 or 11
1-2 months	No. 12 or 13
2-4 months	No. 19 or 20
4-6 months	No. 24 or 25
6-8 months	No. 26 or 27
8-9 months	No 28

RULES FOR FEEDING.

Day feedings begin at 6 a. m., and end at 10 p. m.

Age of Infant.	Intervals in Hours.	No. of Feedings in 24 Hours.	No. of Night Feedings.	Amount ozs. at Each Feeding.	Total Amount of ozs. in 24 Hours.
1 week	2	10	1	1	10
2 weeks	2	10	1	1½	15
4 weeks	2	9	1	2½	22½
6 weeks	2½	8	1	3	24
8 weeks	2½	8	1	3¼	26
3 months	2½	7	0	4	28
4 months	2½	7	0	4½	31½
5 months	3	6	0	5½	33
6 months	3	6	0	5¾	34½
7 months	3	6	0	6¼	37½
8 months	3	6	0	7	42
9 months	3	6	0	7	42
10 months	3	5	0	8½	42½
11 months	3	5	0	8¾	43¾
12 months	3	5	0	9	45

While these changes in the [illegible] composition of the milk are being made, it is [illegible] to regulate the number of feedings, the intervals between the feedings and the quantity at each feeding. The manner in which this is done is seen in Table 17.

TABLE 17.

RULES FOR FEEDING.

Day feedings begin at 6 a. m., and end at 10 p. m.

Age of Infant.	Intervals in Hours.	No. of Feedings in 24 Hours.	No. of Night Feedings.	Amount ozs. at Each Feeding.	Total Amount of ozs. in 24 Hours.
1 week ..	2	10	1	1	10
2 weeks ..	2	10	1	1½	15
4 weeks ..	2	9	1	1½	22½
6 weeks ..	2½	8	1	3	24
8 weeks ..	2½	8	1	3¼	26
3 months .	2½	7	0	4	28
4 months .	2½	7	0	4½	31½
5 months .	3	6	0	5½	33
6 months .	3	6	0	5¾	34½
7 months .	3	6	0	6¼	37½
8 months .	3	6	0	7	42
9 months .	3	6	0	7	42
10 months	3	5	0	8½	42½
11 months	3	5	0	8¾	43¾
12 months	3	5	0	9	45

The feeding of infants with weak digestions can not be so easily managed. At times it is impossible to say what element of the food is causing the trouble, or it may be that all three elements, fat, sugar and proteids, are at fault, or that the appropriate combinations of percentages has not been employed. The secret of successful management of these cases is to provide rest for the stomach. This can best be accomplished by putting the infant, irrespective of its age, on a milk easily within its digestive power, perhaps giving it no higher than 1.5 to 2 per cent. of fat, 5.00 per cent. of sugar, and 0.50 per cent. of proteid.

The infant is to be kept on this mixture until the discomfort of indigestion has passed away, and then we should begin gradually to increase one element after another, until it is taking a food appropriate to its age. The great mistake made by most physicians is their aversion to making so radical a change as that just indicated. They try to decrease the strength of the milk working downwards until a digestible mixture is obtained, whereas they should begin at once at the bottom and work upward.

The majority of cases of difficult digestion are due to the caseinogen, and it is for this reason that I have found the use of the whey-cream mixtures of the greatest value. I am accustomed to use mixtures giving only 0.25 per cent. of caseinogen and rapidly to run the whey-proteids up to 0.90 per cent. (the highest that can be given); then keeping the whey-proteids at 0.90 per cent., I advance the caseinogen first to 0.50 per cent., then to 0.75 per cent., then to 1.00 per cent. The next change is to a total proteid of 1.50 per cent. and then to 2.00 per cent.

Very rarely, in addition to careful modification, partial or complete peptonization may have to be resorted to, but such cases seldom arise, if we diligently and intelligently carry out the essential principles underlying the adaption of cow's milk to an infant.

Finally, let me reiterate what I have said before in other words. Sick infants can not be fed by rule of thumb. We can only lay down the general principles governing the milk supply, the subsequent modification of the milk and finally its adaption to the particular child. Each sick infant is a study by itself. The most successful feeder of infants will be the man who has at his command the many resources embodied in our modern methods of percentage feeding, and who can appreciate the individual needs of the especial infant.

CLIPPINGS FROM LAY EXCHANGES.

FEARFUL AND WONDERFUL NAME.

"'Coccus babyllus polymohpus lissac' is the name given to the hydrophobia microbe by its discoverer" . . . *Binghamton* (N. Y.) *Herald*, June 29.

ANTIPHENACETINE POULTICE.

"Last night Jeffries defied his trainer and doctor by pulling off the antiphenacetine poultice that had been applied twenty-four hours before."—*Chicago Tribune*, July 27, 1903.

ARE "ECLECTIC" AND "EPILEPTIC" SYNONYMOUS?

"The epileptic staff of the county hospital elected officers," . . . *Chicago Record-Herald*, July 19, 1903; "A meeting of the epileptic staff . . . was held . . ," *Chicago Chronicle*, July 20, 1903.

CARDIECTOMY PROPOSED.

A London despatch to the *New York Herald*, and published in the *Ithaca* (N. Y.) *News* of June 29, gives the details of a case of stab-wound of the heart. The surgeon "at first thought the heart itself would have to be removed, but on washing away the blood clots and raising it a little the puncture was found."

INGESTED INTESTINE.

"Dr. —— came to Newkirk about two years ago. . . . A few months ago a baby was born, elating the young physician and spurring him on to renewed effort. About two weeks ago the doctor incurred appendicitis. . . . The operation revealed the fact that the intestine had been eaten, a dangerous symptom."—*Newkirk* (O. T.) *Journal*, Dec. 25, 1902.

MAY BE CYANOSIS.

"His Disease Puzzles Surgeons—Deaf Mute's Body Turns Dark and He Is Unconscious—May Be Cyanosis.—The peculiar symptoms of the illness from which —— is suffering puzzle the surgeons . . . From chest to head his body is discolored and the physicians are unable to explain the cause. . . . The surgeons finally concluded that he was suffering from cyanosis, which is a diseased condition of the circulation, causing a livid bluish color of the skin."—*New York Tribune*, Aug. 5, 1903.

EVERLASTING ANESTHESIA.

A fervid obituary notice which appeared in the *Somerset* (Ky.) *Journal*, of Jan. 13, 1903, contains the following literary gems:

"How inconceivably cold is the grave and the state of death! To-day in this winter atmosphere, through the drifting snow, into the frozen ground they are burying our recent familiar friend and fellow, Dr. ——, yet his once sensative nerves are so benumbed by the chill of death that he feels not the frigid environment.

"When I, with his employer and friend, ——, saw him the other day (6th inst.), and I took the emaciated hand and met the weak but lucid eye, life's near extinction was apparent, but I did not realize then that in six short hours he would be brought fully under the everlasting anesthesia."

Alcohol Applications in Pleurisy, Peritonitis and Arthritis.—Local application of alcohol has proved effective in curing cases of this kind in the experience of Dr. Ssaweljew of Dorpat, as he reports in the *Allg. Med. Ct.-Ztg.*, lxxii, p. 257. He keeps the part wet with a bandage saturated with alcohol and reports unusually rapid recoveries. In case the patient wishes to be up he applies the alcohol on cotton covered with perforated parchment paper, the whole held in place by a suspending bandage. The alcohol is poured through a glass funnel into the perforations as needed. He does not attempt to explain the mechanism of its action, which has been theorized on by many writers, but contents himself with detailing the results of the measure, which he thinks he is the first to apply in pleurisy.

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Owing to the amount of space given to the educational matter in this issue, many of the regular departments are abbreviated and some are omitted.

MEDICAL EDUCATION IN THE UNITED STATES.

This week's issue of The Journal is the third annual educational number, and contains the statistics regarding medical education in the United States covering the year ending June 30, 1903. We believe that the statistics presented in this number, and for the two years preceding, are absolutely correct. It will not be out of place to say that until The Journal, four years ago, undertook to annually gather the information, there was no way of knowing even the number of medical colleges, much less the number of students in, and graduates from, these colleges, aside from the information furnished by the publications of the Commissioner of Education, which are usually a year behind. There were plenty of vague guesses and wild statements made regarding the number of colleges, students and graduates, just as to-day the same kind of statements are made regarding the number of physicians in the United States, which is an unknown quantity.

The average reader, making a casual glance at the statistical and other information presented, will possibly imagine that it was a simple matter to obtain it. He will naturally suppose that a letter to the dean or secretary of a college would bring the information desired. We are sorry to say, however, that this is not correct. Three months have been covered in this work, and yet even as we go to press it has been impossible to get a reply from anyone connected with two of the colleges listed. In a number of instances three or four letters to the dean or secretary or president would have to be supplemented by letters to individual members of the faculties or even to outsiders, before the information desired could be had. This criticism, we are happy to say, applies only to less than twenty institutions, the officers connected with the other colleges replying promptly to our requests for information. We extend thanks to all who aided us in gathering these statistics.

Medical Students in the United States.—The number of medical students in the United States for the year ending June 30, 1903, was 27,615. Of this number 24,930 were at the regular schools, 1,498 at the homeopathic, 848 at the eclectic and 339 at the physio-medical and nondescript schools. There was an increase in the attendance at the regular schools of 52 over last year, and an increase of 1,094 over the year previous—1901. In the homeopathic schools there was a decrease of 119 below that of 1902, and a decrease of 185 since 1901. The eclectic, however, seem to have increased in the number registered. This past year there were 848 registered, against 765 of the preceding year, and 664 in 1901, showing an increase of 83 over 1902, and 184 over 1901. Those in attendance at the physio-medical and nondescript schools numbered 339, an increase of 98 over last year, and 115 over 1901. We give below a comparative table:

Table of Medical College Attendance.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880*....	9,776	1,220	830	...	11,826
1890*....	13,521	1,164	719	...	15,404
1900*....	22,710	1,909	552	...	25,171
1901.....	23,846	1,683	664	224	26,417
1902.....	24,878	1,617	765	241	27,501
1903.....	24,930	1,498	848	339	27,615

Number of Graduates.—The total number of graduates in medicine for the year ending June 30, 1903, was 5,698, an increase of 699 over the preceding year. By referring to the table given below, it will be noticed, however, that this is an increase of only 254 over the number of graduates for the year ending June 30, 1901. As we stated last year, the decrease in the number of graduates in 1902 is assigned to the increased length of course of study and increased requirements by state boards. As we stated then, the decrease might be considered as only temporary, and this is proving to be true. However, the normal condition as regards the number of graduates to the number of students registered has probably not yet been reached, for a very large number of the medical schools adopted the four years' course during the last three years:

Table of Medical College Graduates.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880*....	2,673	380	188	..	3,241
1890*....	3,853	380	221	..	4,454
1900*....	4,715	413	86	..	5,214
1901.....	4,879	387	148	30	5,444
1902.....	4,498	336	138	27	4,999
1903.....	5,088	420	149	41	5,698

Number of Colleges.—The number of medical colleges in the United States which grant the degree of M.D. is 154. Of these 121 are regular, 19 homeopathic, 10 eclectic, 3 physio-medical, and 1, the National Medical College of Chicago, nondescript, this institution advertising to teach not only according to the tenets of the four "schools" mentioned, but also osteopathy. In addition to the above, there are three schools which give instruction in the first two years' work. In other words, there are 157 institutions devoted to teaching medicine in the United States.

Our report for last year showed that there were at that time 156 medical colleges which conferred the degree of M.D. This, however, included the West Coast Medical College of San Francisco, which we found, when too late, should not have been included. Thus there has been a decrease of one college this year. An analysis of the report of medical colleges, given on pp. 436 to 449, with the similar report of last year, shows that three new colleges have been started and four have gone out of existence by consolidation or otherwise.

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* These statistics were obtained from the report of the Commissioner of Education.

We give below the number of medical schools, and include for comparison the same statistics for the years 1880, 1890 and 1900:

Comparative Table of Medical Colleges.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880*....	72	12	6	..	90
1890*....	93	14	9	..	116
1900*....	121	22	8	..	151
1901.....	124	21	10	4	159
1902.....	121	20	10	4	155
1903.....	121	19	10	4	154

Colleges Located in Small Towns.—It is acknowledged by all who have given thought to the subject that a town of less than 50,000 inhabitants can not, except under unusual circumstances, supply the clinical advantages that third and fourth-year students require. Yet the fact is there are thirty medical colleges located in towns of less than 50,000 that confer the degree of M. D. Ten of these schools are in towns of between 30,000 and 40,000, two in towns of between 20,000 and 30,000, six in towns of between 10,000 and 20,000, and nine in towns of less than 10,000.

Ratio of Schools to Population.—There are 14 cities containing 4 or more schools each, and these cities contain 84 of the 154 schools. Below is a table of these cities, with population, number of schools and ratio of population to each school. The population in each instance is based on the census report for 1900. It is quite probable that the population of all of these cities has increased, but, if so, the relative increase is possibly about the same. It will be noticed that New York has the fewest medical schools in proportion to its population, and that Chicago has the distinction of having the largest number of medical schools of any city in the United States.

Table of Ratio of Colleges to Size of Cities.

City.	Population	Number of Schools.	Ratio of Popu to Each School.
Dallas	42.638	4	10,659
Nashville ...	80 865	5	16,173
Kansas City.	163,752	6	27,292
Louisville ...	204,731	7	29,247
Indianapolis	169,164	4	42,291
Baltimore . .	508 957	8	63,619
San Francisco.	342,782	5	68,556
Washington	278,718	4	69.679
Cincinnati ...	325.902	4	81,475
St Louis...	575,238	6	95 873
Chicago	1.698,575	14	121,326
Boston	560.892	4	140.223
Philadelphia	1.293,697	6	215,616
New York . .	3,437.202	7	491,029

THE IDEAL PRELIMINARY EDUCATION FOR MEDICAL STUDENTS.

That there is unusual interest in the education which prospective medical students are to pass through preliminary to undertaking the studies of the medical curriculum proper is proven by the large number of articles which are being written on the subject, by the discussions which take place in the faculties of medical colleges, and among the students of those colleges, by the action taken by the Association of American Medical Colleges as regards the minimum requirement, and, above all, by the high standards of admission which are being adopted by the schools of higher rank in various parts of the country. There can be no doubt that a strong movement has set in toward a more liberal education of the profession, as a whole, and that this movement is supported not only by the best representatives of the profession itself, but also by the more intelligent part of the public with which the profession has to deal. The reason for this movement may be found in the general elevation of educational standards and in the enormous advances in the medical sciences dependent on progress of knowledge in the fundamental subjects of biology, chemistry and physics.

Up to 1895 no medical school in the United States had rigorously demanded for entrance any educational qualifications higher than those corresponding to graduation from an ordinary high school. In that year the Johns Hopkins Medical School was opened, its faculty making the startling announcement that in order to gain admission to the school applicants must not only possess the bachelor's degree in arts or science from a recognized college or university, but must, in addition, present certificates indicating the completion of a year's work (including laboratory practice) in biology, physics and chemistry, and give evidence of the possession of a reading knowledge of the French and German languages. Great skepticism was expressed at the time regarding the advisability of setting up such a high standard even by a school which was liberally endowed and was not dependent for income on the fees of students. A prominent member of the staff of the school itself declared the entrance requirements to be absurdly high, and prophesied that not a student would apply for admission. However, a dozen students were enrolled during the first year, and the number has steadily increased, until last year there were nearly 100 students in its freshman class.

The success of this school in securing a large number of superior students, capable of beginning the subjects in the medical curriculum on a plane far above that on which they must be begun by students less liberally educated, has been perhaps the most potent influence in leading colleges like Harvard and Western Reserve, and after them, a group of other medical schools connected with universities, to require a college education, or at least some part of it, preliminary to the undertaking of medical studies. From these leading medical colleges the movement in favor of more liberal preliminary training is rapidly spreading into the rank and file; even the conservative Association of American Medical Colleges, with its large membership of widely distributed medical schools, at its last meeting adopted high school graduation as a minimum entrance requirement to become operative in the near future, a standard which five years ago would have been thought impossible of attainment.

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* The statistics for these three years were obtained from the report of the Commissioner of Education

It is easy to formulate the needs of the modern medical student in the way of preliminary education. In the first place, he should be liberally educated; in the second place, he should secure that liberal education at a relatively early age, in order that it may be followed by four or five years of the medical school and one or two years of hospital experience, or foreign travel, and the man not be too old when he enters on the actual practice of his profession; in the third place, he should receive training in certain special subjects—like biology, physics and chemistry—which are fundamentally necessary for a proper understanding of anatomy, physiology, pathology and bacteriology, for otherwise he will be compelled either to take up his medical studies in the non-scientific and superficial way which the lack of such training compels, or, in the medical school, he must spend a large part of the time which should be given to the more strictly medical subjects, to the acquisition of that training; and in the fourth place, beside having a good command of English, he should be able to read German or French, or both, in order that he may consult the original sources of a large portion of medical knowledge and keep pace with the advance of medical thought and practice in the great European medical centers.

If these are the real needs of the prospective medical student, how may the admission requirements to our medical schools be adjusted in order that the faculties thereof may feel confident that entering students have satisfied them? Different educators would doubtless answer this question in different ways, as opinions differ as to what may be regarded as "a liberal education." Many assume that it is synonymous with the bachelor's degree. Others maintain that graduation from the high school, the "people's college," should guarantee a sufficiently liberal education for entrance on professional life. The consensus of opinion among the more intelligent of the laity would probably consider the former view nearer its standard than the latter. A liberally educated man, it would say, must have received a more profound training in languages and literature, and in mathematics and the sciences than is obtainable in even the best of our high schools. A physician or a lawyer who can not use the English language with a tolerable degree of accuracy, who has little or no conception of the historic method, who is not familiar with the chief results and general trend of modern science, and who, in his contact with life, is unfamiliar with that literature which is the interpretation of life, must, it thinks, enter on his career more or less seriously handicapped.

Just here, though, the age difficulty is met. The average college graduate is about 23 years old. If he then study medicine four years, spend a year or a year and a half as a hospital interne, and then go abroad for a year to visit European laboratories and clinics, he will be nearly 30 years of age before he enters on his private practice. All will agree that at 30 a man should be actively engaged in the practice of the profession to which he is to devote his life, and many will maintain that the student who enters the medical school at 23 after four years of college will be more blasé and less plastic than the student who enters the medical college directly from the high school. Against these objections it is urged (1) that while the average age at graduation from college is 23, these figures give a false impression; the majority of students graduate at a much earlier age, the average age being higher owing to the presence in the graduating classes of a few men of 35 or 40 and over; (2) that time is now wasted in college and in high schools, and that if the curriculum in these were modified students might easily enter college at 16 or 17 and graduate at 20 or 21, and be as far on as the average college graduate is to-day at 23, and (3) that the greater success which is possible and the greater personal satisfaction derivable justify the student in prefacing his medical course by a thorough education in college.

The medical student who desires to take both the bachelor degree and the medical diploma has been much helped by the wise requirement made by certain schools that a training in chemistry, physics, biology, French and German shall precede medical study. Colleges preparing students for medicine have had to arrange their curricula so that premedical students may, during their three or four undergraduate years, obtain the necessary work in these subjects, for a baccalaureate degree obtained without them is insufficient to admit a student to that medical school. Indeed, the ordinary baccalaureate degree means so many different things with us that some of the better medical schools are of the opinion that two or three years of college work in which training in physics, chemistry and biology are included, make a far better preparation for medical study than four years of college work in which these subjects are omitted, and they have framed their admission requirements accordingly. The significance of the time element in this whole question is made sufficiently obvious by the various devices which have been introduced to shorten the period for obtaining a degree in arts and in medicine. The first method resorted to was to give the college graduate a year's advanced standing when he entered the medical school. If the baccalaureate had taken the science course this was a fair thing to do at a time when the admission requirements were so low that biology, physics, chemistry and even a little Latin had to be taught in the medical school itself, for the science work such a student had done was, as a rule, far better than he could get in the medical school. If he had not had a science course, the year of advanced standing was of doubtful advantage to him, for he had to crowd the work of four years into three. Now that physics, chemistry and biology are being crowded out of the medical school entirely and forced back into the college curriculum, any advanced standing to a college graduate in the medical school other than that corresponding to work of the medical curriculum itself which he may have previously accomplished is likely to be harmful to him; his course will be crowded with conflicts, and, instead of being a better student for his liberal college education, he may be seriously handicapped in his subsequent career.

A second method advised is that of shortening the literary college course to three, or even to two years. The regular undergraduate course at the Johns Hopkins College is a three-year course, and Harvard has an arrangement by which a good student may graduate in three years, instead of four, if he so elects. The president of Columbia University has suggested that the course be so arranged that the bachelor's degree may be given at the end of two years, but there has been a strong outcry against this proposition, and it has nowhere yet been put into practice. Pending the actual shortening of the college course, certain of the universities have practically accomplished the same purpose by establishing laboratories and professorships in the university corresponding to the subjects of the first two years of the medical curriculum and "telescoping" the two courses, so that the student may secure the two degrees, baccalaureate and medical, at the end of six or six and a half years of work; the student in the first two years gets his English, history, mathematics, physics, chemistry, biology and languages, at the beginning of the third year undertakes the first two years of the medical curriculum taught in the university as pure sciences, and at the end of the fourth year receives the bachelor's degree; by this time he has completed the study of the fundamental medical branches and is ready for clinical work, after the successful completion of two years of which he is given the M. D. degree. This plan is at the moment a popular one, for it has not only been adopted by richly endowed institutions, but has met with favor among some of the state universities, many of which are rapidly installing departments of anatomy, physiology and pathology, and are encouraging candidates for the bachelor's degree who propose to take up medicine to elect these subjects as the science work of the third and fourth years. Vigorous protests are everywhere to be heard against this method; many see in it the downfall of the American college and hear in it the deathknell of the time-honored classical course; some even urge that it is dishonest to count the work in anatomy, physiology and pathology toward both degrees.

How all this will ultimately work out we dare not venture to-day. It would not be surprising if later on, when the reforms now in progress in high school education have become effective, students should graduate from high schools a year earlier than they do now; then the college course may be reduced to three years and be differentiated after the first year, so that students looking forward to medicine will follow one course, those intending law another, those looking toward engineering another, and so on. Students would then begin their professional studies at 20 or 21 years of age, and would have behind them not only the liberal culture of the college course, but also that training in specific branches which necessarily precedes the more strictly professional chemistry, biology and languages, at the beginning of the fessions. We suggest this as a possible outcome; but the history of education is full of surprises, and it may well be that some entirely unexpected readjustment at present not conjecturable may be made.

THE MINIMUM REQUIREMENTS.

Above we have been discussing what might be called the ideal preliminary or premedical standard of education. Ideals are excellent, but actual practical life often has to fall far short of ideals. This may be said of the ideal preliminary training for the medical course—we can not yet make all would-be medical students realize the necessity of such an ideal education or force medical colleges to demand it. One thing is possible and essential, that is to fix a working minimum below which none can go, and then duly enforce this standard on all medical colleges. What appears to be a practicable and reasonable minimum at the present time is a good high school course, which must include a certain amount of Latin and living foreign languages.

There are, however, varying high school standards, and a high school diploma in one state or community represents a standard decidedly different from one in another state or community. There are high schools and high schools, and the mere possession of a high school diploma does not always guarantee that the minimum requirements have been attained. The solution of this difficulty is in the standardization of the high school course and the formation of a list of schools that come up to that standard.

But the most important part of the problem to be solved is: What shall be done with him who has no high school diploma or equivalent certificate? In the first place, the applicant must show by examination that he has an equivalent education. In the second place, and this is vital, the examination must not be in the hands of those who are interested in the student passing, viz., those connected with the medical colleges.

This principle must be emphasized, and the right to say whether a man is qualified or not must be taken from those colleges that are run on a purely commercial basis. As we can not separate these from those that are conducted in a scientific and professional spirit, it must apply to all. It seems to us that the plan should be to adopt in each state where there are medical colleges an examination, uniform in all states, conducted by examiners appointed by the boards of registration, as in Ohio, by the state superintendent of schools, or by a similar disinterested body or individual. This method has already been provided for in a few states, and it is to be hoped that it will not be long before it prevails in all. This must be attained by the boards of registration refusing to recognize colleges that do not demand such a certificate, whether the law of the state in which the college is located requires it or not.

We wish it understood that we are not discussing what we believe is the desirable qualification for entrance, but what should be insisted on and enforced as the minimum.

THE VALUE OF MEDICAL BIOGRAPHY TO THE MEDICAL STUDENT.

A true pedagogic method of medical instruction is still a desideratum. The curriculum is so crowded and the time so limited that the acquisition of facts is the first and almost the only consideration. The system generally adopted may make plodding workers, but it lacks the element of mental training that should enter into any system of education. professional or otherwise. The need of this is the greater when the professional student has not had the advantage of a preliminary liberal education that has cultivated the faculties here neglected.

A great teacher of medicine has said: "As the stream of knowledge grows more rapid, we teachers live too much—we have to, I suppose—in the swift current, and few of us have time, too few the inclination, to go upstream to the sources of our art and science, and yet there is not a question which comes before us that can not be most safely approached from the historic side. Even when time and opportunity are lacking for personal investigation, as they often must be to busy teachers, the attitude of mind counts for much . . . ." Unquestionably, much good may be done in stimulating the proper spirit in our students and in giving them a proper perspective by encouraging them to read about the development of medicine as it is made evident in that most interesting form of medical literature, namely, the biography of the masters of medicine and allied sciences. This is wholly rational and based on the most correct pedagogic principles. We do not have in mind so much the establishment of regular courses in medical history, as is urged from time to time, but rather the awakening of interest in the alluring field of medical biography by means of occasional lectures and addresses, and especially by the encouragement to read good books and articles of this character. There is abundant opportunity to direct the attention of students to this aspect of medical literature. The names of great teachers and investigators are mentioned in the classroom every day in connection with their theories and discoveries, many of which have been of epochal importance in the development of a particular branch of science and even of wider significance. What could be more natural for the teacher than to call attention to some of the striking facts and circumstances connected with the lives and the work of such masters in medicine at the same time as the students are directed to books and articles in which more extended information may be obtained? In smaller classes, more particularly those conducted according to the plan of the seminar, students can be asked to prepare sketches of the lives and of certain aspects of the life-work of the founders of and important contributors to the particular branch with which the class is dealing. This plan is followed with success in some of our schools. In such classes it is possible, too, to study the original, classical articles and monographs in which the master-minds of medicine record their observations and discoveries and which form the mile-posts in the onward course of knowledge.

Owing to lack of library facilities, but still more to lack of interest in the historic side of medicine on part of the teachers, the student is given too scant an opportunity to become acquainted with these real classics of medical literature and to benefit from the stimulus that comes with seeking knowledge at its very fountain-head, while sitting, as it were, at the feet of the real masters. And certainly the interest and insight are increased if at the same time he can know something of the lives of these great men, of the conditions under which they worked, and of the state of medicine at the time and in the country in which they lived. We are convinced that it is possible by simple means of this kind to create in many a student a real interest in biographic and historic medical literature an interest that will take on spontaneous growth as he realizes the increased power to grasp subjects when their study can be approached from the developmental side, to say nothing about the pleasure and inspiration that must be felt by the delver into the amenities of medicine. There is just as much of broad human interest and liberalizing influences in medical biography as in any other form of biography, and at the same time it gives the best and liveliest picture of the development of medical knowledge. If any one should doubt the truth of this statement let him read the charming stories of the pioneers of medicine, told with such literary skill by Sir Michael Foster in his Lane Lectures on the History of Physiology during the 16th, 17th and 18th centuries. This book really constitutes the history of scientific medicine during these centuries. The story of such men as Vesalius, Harvey, Malpighi, Borelli, Stensen, Mayow, Lower, Lavoisier and others, with their love of truth and their capacity for patient, honest work, should be in the hands of every student of medicine.

As other examples of important books of this character mention may be made of the series called "Masters of Medicine," which consists of a number of small volumes, each giving an admirable account of the life and work of a man like John Hunter, William Harvey, Edward Jenner, Sir James Simpson, Hermann von Helmholtz, Claude Bernard and others. A few moments daily given to the reading of books of this series will give the hard-worked student cheerful, invigorating and profitable respite from the irksome grind of his routine work in the class-room and laboratory. No better way can be recommended to obtain an insight into the beginnings of the science of bacteriology and its tremendous significance for medicine, human, veterinary, as well as vegetable, in all its bearings, than the study of the life of Pasteur, to whose genius all will agree medical science owes more than to any other single person the creation of its most progressive epoch. The lasting influence for good, for the setting up of noble ideals, for inspiration to become productive in medical knowledge that the careful reading of a book like Vallery-Radot's Life of Pasteur may exercise on the plastic mind of the developing student can not be overstated! Its reading in connection with the course on bacteriology, for instance, will give to that study an interest that it otherwise must be difficult to arouse even by the most genial teacher. This is a book that will have a most wholesome influence, too, on the intelligent non-medical person in arousing interest in and proper appreciation of scientific investigation along medical lines. Unfortunately, the English translation by Mrs. Devonshire is rather expensive—$7.50. It is a book that ought to be within the reach of every medical student. Of other books of this class we have the Life and Letters of Thomas H. Huxley, of Charles Darwin; the Memoirs and Letters of Sir James Paget; "Jugend-Erinnerungen eines alten Aerztes," by von Kussmaul—a charming book—as well as many others. Then there are numerous shorter articles and addresses of a biographic and historic nature that reading of which by medical teachers and students, as well as physicians in general, will be found profitable and interesting. Most of these are easy of access either in medical journals or as separates. The Smithsonian Institution of Washington has reprinted a large number of contributions of this kind which can be obtained for a nominal sum. In this country, Osler has been and is a fertile author of most excellent biographic studies of American medical men, investigators and pioneers, generally in the form of addresses. The interested teacher with the proper "attitude of mind" will find it easy enough to bring material of this kind to the notice of his classes as proper occasions arise. Let us not forget that students of medicine, in the broadest sense, perhaps more than any other class of educated men, and certainly now more than ever before, must be "broadly liberal in order to be minutely special."

THE RATIO OF STUDENTS TO TEACHERS IN THE MODERN MEDICAL SCHOOL.

The greatly increased cost of medical education in those schools which are teaching modern medicine, in the broad sense, has been frequently commented on, and it is undoubtedly true that this cost has far outgrown the purse of the average student. In the last ten or fifteen years the tuition fees have been raised at least 50 per cent., but the cost of maintenance has been increased to a much greater degree, and it is said that in one institution the average cost for each student is nearly 125 per cent. more than the total fees paid by him. Present indications are, moreover, that the limit of expense for maintenance has by no means been reached, while the fees demanded by a few of the larger schools seem to be as near to the maximum as it is reasonable to exact of the average student. With this condition of affairs it is obvious that if our medical schools are to be maintained on such a basis as will enable them to offer instruction adequate to the demands of the time, larger endowments must be had either through private beneficence or from the state.

What is the explanation of this increase? Are these conditions temporary, or likely to continue for some time to come? Fundamentally, they are to be found in the increased length of the medical course in the broadening of medical science through the developments of bacteriology, etc., and in the change in methods of instruction, and especially in the introduction of laboratory and practical methods of teaching in the fundamental branches, and as well in the clinical branches, though as yet in less degree. New buildings have become necessary for the departments of anatomy, physiology, chemistry, bacteriology, pathology and pharmacology; expensive laboratory equipment, apparatus and supplies are required for the departments. But costly as these things are, they are, for the most part, permanent investments, and have been more than balanced by the increase in the income of the schools from fees. With the more progressive schools the most important item is the increase in the instructional force, and the change in the character of the faculty. Under the purely didactic plan of teaching which prevailed up to fifteen or twenty years age—for the amphitheater clinic of those days was little more than an illustrative didactic lecture—one instructor in each branch sufficed for the whole student body whether it numbered 50 or 500 students. A faculty numbering 20 or 30 was a large one for those days, though not a few schools had an annual attendance of five or six hundred students. Only one member of the faculty, the professor of chemistry, devoted his whole time to teaching, and had, therefore, to be paid a salary, and in the majority of colleges the occupant of even this chair was a general practitioner, who taught without pay. The introduction of laboratory methods has made such an arrangement impossible. A didactic lecture in anatomy or chemistry may be about as advantageously delivered to 500 students as to 30, but the adequate supervision of their work in the dissecting room or in a laboratory of chemistry, physiology, bacteriology or pathology demands an instructor for every 20 or 30 students at the most.

Under the old régime, the larger schools possessed a great pecuniary advantage over the smaller ones. The faculty of a school of several hundred students was not of necessity, nor was it, in fact, materially larger than that of a school attended by 30 or 40 students. Yet the income from fees was several times as large. It was frequently urged as an argument in favor of the smaller schools that more intimate personal contact of the pupil and teacher was secured, and there was some truth in this assertion. The same statement is sometimes made at the present time, but a careful scrutiny of the facts will show that the statement is, for the most part, no longer true. Single departments, such as those of anatomy or physiology in some of the larger schools, number almost as many instructors as sufficed for the whole faculty twenty years ago. Examination of the figures in five of the largest schools reveals the fact that the ratio of teachers to students is from 1 to 4 or 5, and that it is larger than in many institutions with an attendance of one to two hundred. It might be argued that the majority of these instructors are subordinate members of the faculty, but it should be noted that it is coming to be the custom in this country, as it has long been in Germany and other European countries, to recruit the faculty of the smaller provincial school from that of the larger metropolitan college.

It is not the initial cost of buildings and equipments, the expense of repair and renewal of which is slight, which constitutes the important item of cost in any enterprise. It is the constantly running annual outlay for salaries and the like which so rapidly amount to a large sum. This greatly increased ratio of teachers to students, together with the fact that so many of them must be paid a sufficient salary to enable them to live in the absence of other income, fully explains the great increase of the cost of medical education. In a few medical colleges some of the departments have several salaried instructors in each department, and the aggregate cost is readily seen to be great.

If, as many believe to be the case, similar provision of salaried professors and assistants must be made in the clinical branches, it is difficult to see how the modern medical school can be maintained without very large endowments from some source. The idea which has led to this great change may be briefly expressed as that of "group teaching" as opposed to teaching in "mass." The tendency of the times is all away from "mass teaching" —a method which obtained quite as much in the small as in the large college under the old order of things now passing away. Instruction in "small groups" is imperative under laboratory and practical methods, and such teaching is of necessity very costly.

MEDICAL TEACHING AND MEDICAL RESEARCH AND THE INCREASING OPPORTUNITIES IN AMERICA TO ENTER ITS CAREER.

This interesting subject is discussed briefly in the *University Record* of May, 1903. It is quite appropriate to continue the discussion in this, the educational, number of The Journal. The subject is of interest to every physician because it deals with questions that touch the vital center of medicine in this country; it is of interest to every medical student because he is concerned directly and personally with medical teaching, and, naturally, he must feel gratified if he learns that his opportunities to study medicine are better than those of his predecessors. The article in question points out that not so very long ago, indeed, only a few years ago, this country offered but one distinctly medical career to the student, namely, the practice of medicine in some form or other. It says:

> Twenty years ago there was but an insignificant number of salaried medical professorships; assistants were not necessary because the teaching was done almost wholly by didactic lectures; very little attention indeed was given to research in the medical schools, and endowments for medical research existed only in the dreams of the visionary. But within a remarkably short time a most marvelous change has taken place. The elevation of the standards of medical education, the introduction of laboratory methods in medical teaching, the fostering influence of our best universities, and the steadily increasing endowments of medical teaching and investigation are some of the most important elements in the growth that has led up to the present period of promise, the blooming period of medicine in America. Rapid and healthy development of this nature can not but be associated with an increasingly diversified differentiation of function, and so there is now larger opportunity than ever before for successful careers as medical teachers and investigators to the exclusion of the actual practice of medicine.
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> Many of our best universities now offer practically the same inducements to properly qualified young men to join the departments of anatomy, physiology, pathology, and bacteriology, as they do in the case of the other university departments, let us say history, physics, chemistry, and zoölogy. In not a few instances positions in the medical departments just named are filled with success by men who have specialized in some one of these lines without having taken the regular courses in medicine. This fact is cited here simply to show that these fields offer welcome opportunities to qualified aspirants for academic careers.
>
> In the more purely clinical branches the conditions as yet are somewhat different. Professors and instructors in these branches rarely, if ever, give their time and energy undividedly to teaching and investigation, but combine this work with the arduous duties of private practice. But even in these branches, related so intimately to the practical work of the physician, indications point to new developments that before long may culminate in the establishment in some of our universities of departments of medicine, of surgery, and of obstetrics on the same general basis as other university departments. Necessarily this must lead to the foundation of university hospitals as well as to the creation of a large number of positions to be filled by specially trained men who are willing to devote themselves wholly to the teaching of the clinical branches and to the investigation of the many important problems that await solution in these fields.
>
> Then, again, the recent endowments of independent institutions for medical research will offer especially desirable opportunities for those whose ability and training fit them for the highest order of investigative work. The establishment, too, of research professorships in the universities may be found to prove advantageous in order to advance to greater opportunity the man of genius sure to appear from time to time as the number of men engaged in productive work in the medical sciences increases.
>
> Attention may be directed also to the fact that government and municipal services are demanding an increasing number of specially trained men to carry on their work, much of which is of the nature of research in various lines. The health departments of our larger cities need men trained in sanitary science; the *Philippine civil government* has established laboratories in which active investigation is carried on in the rich field of tropical diseases.
>
> The managers of many of our state hospitals for the insane are beginning to realize that the surest antidote to the fossilizing influence of routine and institutionalism is to be found in the reorganization of the medical work on a scientific basis so as to attract to this service men of scientific interests and training.

These statements represent the conditions as they are. As the advent of university ideals in medical education is with us as yet barely an accomplished fact, the opportunities spoken of in teaching, in research, in sanitary science are bound to widen more and more as time goes on. The fact that medicine now offers the talented, energetic, well-trained man something more than, and different from, the chance to crowd into the ranks of the practitioner will attract men with broad training and high ideals. In order to make careers of the kind here discussed just as attractive as possible to the finest types of college student—for no one questions for a moment the importance of this new departure on the progress of American medicine—the question of financial remuneration should be considered most carefully. The prudent man, who must earn his livelihood, will hesitate to embark on an exclusively academic or scientific career unless it appears quite clear that he need have no special fear for the future. Inasmuch as the salaries paid men of this kind probably will not exceed greatly, if at all, those paid men of equal rank in other departments of universities—and such salaries are confessedly small—it is most desirable that some liberal system of pension for age, disability, specially meritorious service, or other cause be instituted. This would result in a feeling of security the importance of which can not be doubted.

HOSPITAL AND CLINICAL WORK.

In the majority of the articles that have appeared in this country on the desiderata of medical education, comparatively little stress has been placed on the clinical training that ought to finish off a medical student's course. Possibly the matter has appeared too self-evident to require special emphasis, but the omission is the more notable since this subject was the principal one discussed in a rather remarkable symposium on medical training published in the German periodicals four or five years ago, in which von Jaksch and several other prominent German physicians took part. The present agitation among German medical students on account of the coming exaction of the "practical year" taking effect in 1906, and which is, therefore, retroactive in the case of any who have matriculated within the past year or two, is in point. The necessity of more than mere theoretical training, and, indeed, that of actual hospital practice, is so far recognized in Germany that it has been made imperative.

The necessity of this requirement is no less in this country, but the facilities for meeting it are far inferior, and the total number of German medical students is hardly more than that of graduates here. How to furnish our five or six thousand annual diplomates with practical clinical instruction and with hospital positions is a problem. The colleges that can furnish only the theory, however richly endowed and supplied with well-qualified teachers, laboratory facilities, etc., will be at a distinct disadvantage. The hospital year means more than simply "walking the hospitals"; it means actual residence and responsibility, and all that that kind of training implies. Here the state universities, with their well-equipped laboratories, etc., unless they have their medical schools in or near populous centers, will, at least in many cases, be at a disadvantage; and this may materially modify the future of the medical departments of some of these institutions. How, on the other hand, it will affect the commercial, or what we may call the personal advertising medical colleges is another problem.

One thing we believe will result from the better recognition of this need—it will, like the state examinations, stimulate to better work, and those medical schools that best fit their students by giving them practical clinical experience, without which they are seldom fitted to take the responsibility of the lives and health of their fellow men, will be the successful colleges of the coming years.

AN EDUCATOR'S FORECAST OF FUTURE MEDICAL EDUCATION.

An eminent educator, President Jordan[1] of Leland Stanford University, in a commencement address, delivered at the Cooper Medical College, San Francisco, gives his views regarding the future of medical education in America. He says the two types of medical colleges in the future will be: One, the present type of which is the medical department of the Michigan University, the aim of which is to elevate the profession in the aggregate, taking men as they are, demanding not excessive, but respectable, preliminary requirements, and maintaining no standard impracticable for the average man, but turning out as well-qualified physicians as the material will allow. The other, the existing type of which is the Johns Hopkins School, will demand the highest preliminary culture and send out only a limited number of the very best into the profession. The former will be the type toward which he thinks the state universities will tend, while a few highly endowed private institutions will have the highest standard, and be special centers of medical science and research. "The practical evolution of the matter," he says, "will be this: The medical school for the exceptional student will require a college course of science with physiology and chemistry as the leading subjects; other sciences, with German and French, being necessary factors. The state medical colleges and those of similar purposes will content themselves with a minimum of two years of college work, along semiprofessional lines, the preparatory medical course." It will be seen from this that Professor Jordan takes no apparent account of the value of a classical education, the sciences in modern languages being, in his forecast, the essentials that will be demanded. Whether this prophecy will be entirely realized is perhaps a little open to question, and it may be that he underestimates the value of the preparatory medical course and the quality of those who will choose it. There are now, and always will be, some institutions that will demand the fullest culture as preparatory to professional studies, and probably in the near future such institutions will grant degress that will be more highly valued, if not nominally more distinguished, than those of the average school.

THE VALUE OF THE CLASSICS IN MEDICAL EDUCATION.

In view of the apparent disregard of classics, it is of some interest to see that in the laws of some of the states a certain amount of classical education is still considered an essential preparatory requirement. In the new Michigan law there is a provision that the applicant shall have, previous to beginning his course in medicine, "a diploma from a recognized and reputable high school, academy, college or university having a classical course, or shall have passed examination equivalent at least to the minimum standard of preliminary education adopted and published by the board, before the examiners appointed and in accordance with the regulations of the aforesaid board, and at such time and place as the board may designate." In the Maine law the minimum grade of preliminary education before admission to the study of medicine includes, besides the ordinary high school scientific studies, ability to read at sight common Latin prose. There are other regulations of similar import in the by-laws of some state boards, but these that we have mentioned are specified in actual legislation. We believe that the tendency will be to emphasize the importance of a certain amount of classical training, rather than the reverse. Bearing on this point, as we have noticed elsewhere, certain fears have been expressed in Germany because of the admission of graduates of *Realschules,* or non-classical high schools, to the study of medicine. These fears prove to have been groundless because it is found that only a comparative few of such choose the profession of medicine. A certain knowledge of Latin and Greek, at least as much as is required for admission to the freshman class of a good university, is almost essential to the medical man, and more would certainly be very desirable. There is nothing that helps more in the acquirement of the modern languages than some knowledge of the classics, and modern languages are, to a certain extent, indispensable to the high-class medical education.

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[1] Popular Science Monthly, August.

A FEATURE OF THE MICHIGAN PRACTICE ACT.

It will be remembered, in regard to the Michigan medical law, that when the Nottingham act was first introduced it contained a provision requiring graduates of medical schools of foreign countries which do not recognize the Michigan diploma to undergo a course in Michigan schools, the law corresponding to that of certain provinces of the Dominion of Canada, and was intended to apply to those coming from that country. This was objected to, and considerably criticised by newspapers and others at the time. As the law now reads, an applicant for examination must have a diploma from a legally established and reputable college of medicine in the United States or some foreign nation, "provided such foreign nation accord a like privilege to the graduates of approved medical colleges of this state." In effect, this leaves the matter very much as in the original bill. It will be hard to see how a graduate from a Quebec college, for example, or, indeed, from any foreign country, can be admitted to examination in Michigan under the law. It leaves out, however, the objectionable passage in regard to their having to study in Michigan institutions, which was really copied from certain Canadian provincial laws, and it has not the appearance, therefore, of being drawn up to favor home industries. So far as appearances go, it is a measure of reciprocity, or rather of non-reciprocity, with countries which do not recognize the Michigan diplomas. If we read the law aright, foreigners will have no show hereafter in Michigan.

MEMORIAL TO MAJOR WALTER REED.

A meeting of the committees appointed by the American Medical Association and the American Association for the Advancement of Science has been called to meet at Bar Harbor, Me., August 15, to confer regarding the memorial in honor of the late Major Walter Reed, M.D. There are other committees beside the ones above mentioned, and the object is to secure immediate, concerted action and unanimity of purpose. The chairman of the committee representing the American Medical Association is Dr. W. W. Keen, Philadelphia, and Dr. Daniel C. Gilman, Baltimore, is chairman of the committee representing the American Association for the Advancement of Science. It is to be hoped that the various committees will be heartily supported by those whom they represent, and that in the immediate future a memorial worthy of the man and his work will be dedicated to Major Reed.

Medical News.

CALIFORNIA.

Prison for "Herb King."—"Dr." Frank N. Martin, who dispensed herb medicines as the "Herb King," and referred to in these columns before, was sentenced to thirty years' imprisonment in the state prison at Folsom, for rape committed on a feeble-minded girl who was under his care.

More Bubonic Plague.—Since June 5, three more cases of bubonic plague have occurred at San Francisco, making 98 in all. Pietro Brancota died at 19 Jasper Place, July 20; Pietro Spadafora, son of above, was taken from same address and died at Southern Pacific Hospital; Chin Guie, a native of China, died at 743 Jackson street, July 15.

MARYLAND.

Unlicensed Practitioner Arrested.—W. S. Howard, Vale Summit, was arrested in Frostburg, July 22, charged with practicing medicine in Allegany County without having obtained license from the State Board of Medical Examiners, and with having failed to register with the county clerk. He was held in $300 bail.

The Cumberland Epidemic.—Dr. Francis P. O'Neil, Baltimore, who attended the smallpox cases at the Emergency Hospital in Cumberland for 51 days, has rendered a bill for $512.50, which the city council has ordered paid. There were 41 cases from the city and 6 from the surrounding country. But 2 remain, and they are about to be discharged. The total cost of the epidemic to the city was $5,000.

Baltimore.

New University Building.—The plan for the new building of the University of Maryland provides for a four-story brick structure, 100 by 90 feet, to cost $50,000. The basement and first and second floors will be used by the dental department. The other floors will be used by the medical department for bacteriologic and other laboratories.

Personal.—Dr. J. Williams Lord has resigned the chair of clinical dermatology in the Baltimore Medical College, and Dr. Edgar R. Strobel has received the appointment.——Dr. Nathan E. B. Iglehart has gone to Muskoka, Canada, for a month.——Dr. Albert L. Levy has been appointed resident physician to the Hebrew Hospital, vice Dr. Nathaniel G. Kierle, Jr., resigned, to go abroad.

July Statistics.—During July the health department reported 1,097 deaths and 782 births. There were 506 deaths under 5, or 46.12 per cent. Only one case of smallpox was reported. The chief causes of death were: Typhoid fever, 19; scarlet fever, 11; whooping cough, 9; diphtheria, 8; dysentery, 7; cancer, 40; apoplexy, 36; heart disease, 60; pneumonia, 41; tuberculosis, 121; Bright's disease, 58; suicide, 5; puerperal septicemia. 6; and diarrhea and enteritis, 233. The deaths for the week ended August 8 were only 179.

MASSACHUSETTS.

Personal.—Dr. Louis A. Prefontaine has been appointed oculist to the Springfield Hospital, sharing that position with Dr. Ralph Carleton.

New Gift to Milford Hospital.—Mr. E. S. Draper has authorized the erection and equipment of a chemical and bacteriologic laboratory for the Milford Hospital recently built and equipped by him and presented to the town.

Home for Insane Colony.—Ground was broken, July 30, for the building for the Grafton colony of the Worcester Insane Asylum, at the intersection of the town lines of Shrewsbury, Westboro and Grafton. The building will accommodate sixty patients. It is planned that the colony shall so develop as to accommodate in a few years from two to three thousand patients.

Boston's Vital Statistics.—During the week ended August 8, a marked improvement was shown over the week before and also over the corresponding week of last year. The deaths reported were only 170. a rate of 14.70 per annum per 1,000. There were reported 30 cases of diphtheria, with 1 death; 15 cases of scarlet fever; 25 cases of typhoid fever, with 3 deaths; 20 cases of measles, and 14 cases of tuberculosis and 10 deaths. Pneumonia caused 13 deaths; heart disease. 13; bronchitis, 2, and marasmus, 7. Of children under 1 year, 60 died and 77 under 5 years.

MICHIGAN.

Smallpox.—Bay City reports several cases and one death.——Houghton County, after a three years' siege, is now free from the disease. About 65 cases have been treated in the isolation hospital since the first of the year, with no deaths.

Old Doctors Long Married.—Dr. J. D. Bear, Detroit, fifty-nine years married, celebrated his eightieth birthday anniversary, July 31.——Dr. and Mrs. William H. Haze, Lansing, recently celebrated the sixty-third anniversary of their marriage, Dr. Haze is in his eighty-seventh year.

Michigan Tetanus.—The State Board of Health is endeavoring to collect facts relative to the prevalence of tetanus in the state, to the exact mode of its causation, and to publish the facts thus obtained for the information and protection of the people. To this end it has prepared and issued a special blank to contain the final report of each case of tetanus reported in the state.

Personal.—Dr. Alfred M. Switzer, Grand Rapids, has resigned as city physician and has been succeeded by Dr. Ralph C. Apted.——Dr. Rush McNair, Kalamazoo, is taking postgraduate work in Edinburgh and Paris.——Dr. Charles C. Wallin has been appointed city bacteriologist of Grand Rapids. ——Dr. James R. Arnell, Ann Arbor, formerly instructor in internal medicine at the University, has been appointed associate professor of medicine in the University of Colorado, Boulder.

MISSOURI.

Serious Accident to Physician.—Dr. Kearan C. Cummins, Maryville, after throwing down hay to his horse, was impaled on the tines of the pitchfork, one of which passed through his body, narrowly missing the kidney.

Typhoid Gaining Ground.—St. Louis reports for the four months from April to July inclusive 444 cases of typhoid fever with 74 deaths. In the same period of 1902 there were 197 cases with 46 deaths, and in 1901, 131 cases and 31 deaths. The City Hospital now has 21 typhoid cases.

Personal.—Dr. Lyman T. Reber, for eight years mortuary clerk of the St. Louis Department of Health, has resigned to enter private practice.——Dr. Edward C. Runge, superintendent of the St. Louis Insane Asylum, has resigned, and will accept a position tendered him at the Government Hospital for the Insane, Washington, D. C.

Registration of Consumptives.—An ordinance became law in Kansas City, July 24, without the approval of the mayor, which provides that all persons suffering from consumption in an infectious stage must be registered with the board of health, and must follow the instructions as to isolation and treatment made in each case by the city physician. The lay press says that the law is aimed primarily at the negroes, a large percentage of whom have consumption, and who in their conduct on the streets and in crowds show no care for the danger to public safety from the germs of the disease.

NEBRASKA.

Fire in Physician's Office.—A fire which is said to have started in the office of Dr. Chester D. Barnes, Tecumseh, resulted in damage amounting to $15,000.

Banished from Lincoln.—Edward C. Smith and Gustav Ephraim, styling themselves the "Wonderful Gentile and Jew Healers," and posing as instantaneous and permanent healers of all diseases, were summarily expelled from Lincoln.

Personal.—Dr. J. V. Bechtol, for many years at Friend, has just returned from taking a two months' post-graduate course in New York, and has located at Hastings.——Dr. E. E. Robbins, Ord, has been appointed third assistant physician at the Asylum for the Insane, Hastings.——Drs. Alonzo E. and Lucinda C. Mack, Omaha, have returned after an absence of several months abroad.

Recommend Revocation.—The secretary of the State Board of Health, on August 6, recommended the revocation of the license of Dr. Charles W. Downs, Omaha, for violation of the law forbidding the distribution of advertising relating to sexual diseases which tended to corrupt the morals of people. The advertising is considered of a particularly vicious nature. Downs appeared before the board and made the defense that he did not know there was such a law.

NEW YORK.

Gives Addition to Hospital.—Congressman Littauer has given $25,000 for an addition to the Nathan Littauer Hospital, Gloversville, which he erected several years ago as a memorial to his father.

After Suit, Compromise.—Dr. Charles F. Wicker, Saranac Lake, who sued the village for $1,200 on account of care of smallpox cases last year, and was given a judgment of $1,100 and costs, has agreed to settle for $1,000.

Artesian Water for Ithaca.—On August 6, the Board of Water Commissioners began the distribution of artesian water from wells owned by the city, charging one cent a gallon. Before long it is believed that the artesian water will be supplied to the citizens through the mains of the Ithaca Waterworks Company.

New York City.

No Race Suicide.—Health department records for the week ended July 25 show 1,121 births and 613 deaths in Greater New York.

Daily Medical Journal.—It is announced by the lay press that Dr. Albert W. Ferris and six other New York physicians have formed a company for the publication of a daily medical journal, the first number of which will appear October 1.

Rosenbaum Litigation to Cease.—The litigation over the estate of Mrs. Rosenbaum, valued at $30,000, which was left by will to the German Hospital, is to be closed. Mr. Rosenbaum contested the will, and after his death, his executor endeavored to prevent the hospital from taking possession of the property. He has now, it is said, agreed to give a clear title.

PENNSYLVANIA.

Diphtheria Epidemic.—An epidemic of diphtheria is said to prevail in several boroughs of Delaware County. A number of deaths have been reported, a large proportion of which are from the so-called "black" diphtheria.

Sues for Detention in Isolation Hospital.—Because he was forced into the pesthouse at Schuylkill Haven, Frederick Hinckle has brought suit for $10,000 damages against that borough. The plaintiff claims that he did not have smallpox on admission, nor did he contract smallpox while there.

Pure Food Prosecutions.—Prosecutions have been begun by the State Dairy and Food Commissioner against six Philadelphia firms for alleged selling of beer adulterated with salicylic acid.——A warrant has been issued against a firm of large wholesale liquor dealers charged with selling for blackberry brandy a compound colored by a coal-tar product.——It is hoped by many that the activity of the commissioner will have a widespread influence in arousing public sentiment, and will draw the attention of the National government to the need of general measures against adulterated foods and beverages.——The report of the department for July shows that during June, of the 63 samples of butter analyzed 44 were pure and 19 bogus; 93 samples of lard tested showed 44 pure and 49 impure or imitation; of 68 samples of milk and cream analyzed only 41 were found pure. Sixty-nine prosecutions were brought, 36 of which were in Philadelphia.

Philadelphia.

Resolutions Regarding Dr. Parish.—The faculty of the Woman's Medical College has adopted resolutions eulogistic of the late Dr. William Henry Parish, professor of anatomy in that institution.

Typhoid and Smallpox.—The official record of the board of health for the week ended August 8 showed that 36 new cases of smallpox had occurred, with 5 deaths. The new cases of typhoid fever numbered 108. The prevalence of the latter disease is ascribed to the promiscuous drinking of water at nearby pleasure resorts. The department of health is vigorously carrying on its crusade of vaccination. Some fear is felt that unless the disease is gotten under control before the onset of cold weather, there will be a serious outbreak.

Pasteurizing Plant in Operation.—The pasteurizing plant, the object of which is to supply pure food to the infants of the poor, and which was established by the benevolence of Nathan Straus of New York and of many Philadelphians, was put into actual operation on August 5. Dr. A. R. Green of New York inspected the establishment, and found it in excellent condition. The capacity of the laboratory is 15,000 bottles of pasteurized milk daily. The milk will be sold at the laboratory or at distributing stations at one cent a bottle. Persons who are unable to pay this sum may obtain milk for infants free, by producing evidence that they are worthy.

No Habeas Corpus for the Quarantined.—A writ of habeas corpus brought to obtain the liberty of Norman R. Hyland and family who are under smallpox quarantine in their home, and who were said to be starving, was dismissed. The quarantine was necessitated by the persistent refusal of the man to have his child suffering with smallpox taken to the Municipal Hospital for treatment. Judge Davis, in concluding his decision that the board of health has a right to quarantine the house, commenting on the destitute condition, said that "if provision is to be made for families under quarantine in their homes, there would be danger of many families being under quarantine 365 days in the year."

GENERAL.

Proposed Bureau of Medicines and Foods.—The following preamble and resolutions were presented to the American Pharmaceutical Association, at its recent meeting at Mackinac Island, by Dr. H. H. Rusby, chairman of the committee appointed to consider the proposition to create a Bureau of Medicines and Foods:

WHEREAS, The foods and medicines supplied in the United States *do not* so uniformly agree with proper standards of purity, quality and strength as they should, and

WHEREAS, A degree of distrust and want of confidence concerning the quality of such foods and medicines prevails to a discouraging extent, therefore, it is

RESOLVED, That a more perfectly organized system for remedying the above-mentioned conditions than that now existing should be devised and put into operation, and

Resolved, That the American Pharmaceutical Association and the American Medical Association, acting in harmony with the United States government authorities, constitute the most competent and trustworthy means for attaining the objects named, and

Resolved, That the American Pharmaceutical Association shall co-operate to this end with the above institutions, provided, that a plan be devised satisfactory to those institutions, and that the committee of this association be continued and instructed to report to the council. In the event that a plan satisfactory to the council of this association be reported to it previous to the next meeting of this association, said council shall be authorized to elect from the members of the American Pharmaceutical Association a board of directors consisting of five members to act with a similar board, in the event of its appointment by the American Medical Association and with the United States government authorities, in the establishment of a National Bureau of Medicines and Foods, and this council shall immediately on the election of such board report the same to the President of the American Medical Association, and

Resolved, That in carrying out these resolutions the following general principles shall be adhered to:

1. That neither this committee nor the proposed board of directors shall have authority to draw on any funds of the American Pharmaceutical Association.

2. That the methods employed for obtaining the objects stated above may include commendation of worthy products, or condemnation of unworthy ones, or both, provided that said methods of condemnation do not in any way involve the American Pharmaceutical Association in legal responsibility.

3. That nothing to be undertaken by such a bureau shall be in conflict with the spirit of the United States Pharmacopeia or with the United States government authorities.

4. That the operation of the proposed bureau shall be free from any attempt to secure financial profit for any of the institutes named herein nor for any of their members or agents; but said bureau is authorized to employ proper means for securing the funds necessary to defray its legitimate expenses.

On motion of Mr. Diehl the preamble and first resolution were adopted, and the whole referred to the council for action. The council recommended that the committee be continued.

FOREIGN.

The "Practical Year" Regulation.—The protests of German medical students against the retroactive feature of the "practical year" regulation, continue. They have been sent to the imperial chancellor from the universities of Bonn, Kiel, Munich and Wurzburg, and others are likely to follow.

French Congress Against Alcoholism.—The first session of this organization will be held October 26 to 29, 1903, at the great amphitheater of the Faculty of Medicine at Paris. It includes all persons and organizations interested in counteracting the ravages of alcoholism. The program includes the discussion of the actual situation and of the present status of the combat against intemperance, the public legislation and private initiative.

Regulation of Proprietary Remedies.—The Hamburg senate has passed an ordinance prohibiting any testimonials or recommendations on the wrappers or receptacles of proprietary remedies, and requiring thereon the name of the drug, the name of the firm preparing it and the price. Dealers are prohibited from repeating prescriptions of such remedies, and those which are to be on order of physicians must have that fact stated on the wrapper. Violations of the law are punishable by a fine of up to $36, or a corresponding period of imprisonment.

Pasteur Institute at Breslau.—There is to be added to the Hygienic Institute of the University of Breslau, under the direction of Professor Flügge, a department for antirabic treatment. This is the result of the experience, during recent years, of the Silesian province of Prussia, where bites of rabid animals have been unusually frequent. It is in the Districts of Oppeln and Breslau that most of these casualties have occurred. Of a total of 263 cases in 1898 in all Prussia, 102 occurred in Silesia; of 303 in 1899, 121; of 233 in 1900, 64. Heretofore, there has been but one Pasteur institute in Prussia, that in the Institute for Infectious Diseases at Berlin.

To Test Typhoid Prophylaxis.—The German reichstag has appropriated $20,000 for a test of the methods of Koch against typhoid. The investigations will be made chiefly at Strassburg, Landau, Saarbrück, Metz and Trier. Koch's plan is based on the early recognition of the disease, rendering it possible to isolate the patients and thus prevent infection. Especially should the ambulatory cases be looked after, as the least affected of these may spread the infection. Koch has also recommended special bacterial stations in the typhoid infected regions, which should work hand to hand with the general practitioners in determining the earliest appearances of the disorder.

Character of Medical Students.—The *Chronik* of the Berlin University says that the fears some have felt in regard to the admission of graduates of the *Realschules* (the non-classical high school) to the medical studies, have thus far been without basis. In the first semester of last year there was not a single one of these students in the medical classes, against 44 in the law schools. In the next semester we find some realschule graduates studying medicine, but the law students are in a very marked majority. The true *Realist*, says the *Allg. Centralzeitung*, chooses for his life occupation the one that affords him the best prospects, this, at the present time, excluding a few exceptional cases, is not the profession of medicine and the knowledge of this fact happily is not limited to the medical students alone.

The Statistics of Medical Students in Germany.—There are, at the present time, according to the *Klinisch-Therapeutische Wochenschrift*, 6,257 medical students in Germany as against 6,398 last winter, and 6,749 in the summer semester, 1902. Although every year shows a decrease in the number of students, still there is a strong over-production of physicians, if one takes into account the proportion between the population and physicians. The natural increase of the population, being yearly about half a million, would warrant a yearly addition of 250 physicians, and then there would be no lack. If all the matriculants of the present time complete their courses there will be yearly about 1,250 physicians sent out, about five times the number actually required. At the present time the number in the respective institutions are: München 1,003, Berlin 976, Leipzig 433, Freiburg 421, Würzburg 396, Kiel 317, Heidelberg 311, Bonn 242, Strassburg 237, Tübingen 207, Breslau 204, Erlanger 201, Greifswald 197, Königsberg 196, Halle 180, Marburg 176, Giessen 158, Göttingen 150, Jena 131, and Rostock 121.

LONDON LETTER.

Physical Degeneration of the Urban Population—Enormous Proportion of Unfitness for Military Service.

The physical degeneration of the population is a subject which of late has received much attention both in the medical and lay press and been a matter of concern to several writers. THE JOURNAL has referred to it before. Alarm is felt at the fact that an enormous number of the town-bred population are unfit for military service. A parliamentary paper by Sir William Taylor, director-general of the Army Medical Service, which has just been published, throws some light on the subject. During the period 1893-1902 there were examined for enlistment 679,703 men, of whom 234,914 were rejected as medically unfit for service, giving a rejection ratio of 34.6 per cent. Sir William Taylor states that no record is kept of the number of men turned away without being examined, but that the number is a large one, though whether it would bring the number rejected up to 60 per cent. he can not say. The majority are rejected on account of poor physical development, namely, under chest measurement, defective vision, under weight, under height, imperfect constitution and debility, disease of veins, disease of heart, defects of lower limbs, varicocele, flat feet and loss and decay of teeth. Bad teeth and flat feet occupy a comparatively low place on the list of causes. But with regard to decay of teeth the number has increased in the last four or five years. It has been estimated that as much as 77 per cent. of the population, or 25,000,000, now live in towns. Of this number probably at least 6,000,000 appear to live in such poverty as to be unable to rear their children under conditions favorable to health.

Revised Classification of the Causes of Death.

We have called attention before (THE JOURNAL, May 10, 1902, p. 1242) to the new official list of the causes of death. Every effort is being made to render official statistics as accurate as possible. The registrar general has just issued another memorandum on the subject. The use of the term rubeola for measles is condemned, morbilli being the only Latin equivalent recognized by the Royal College of Physicians. In cases of peritonitis the cause, such as hernia, perforating ulcer, appendicitis or metritis should be stated. When a practitioner returns a cause of death as simply peritonitis, an official form is sent to him requesting a statement of the probable cause of the disease.

Infant Mortality in Bombay.

Dr. D. R. Bardi has recently read before the Bombay Medical and Physical Society an exhaustive paper on infant mortality in that town. In 1899 the infant mortality was 593 per 1,000 births. This appalling loss of life is due to overcrowding, bad sanitation, and above all to ignorance and superstition, which can be efficiently dealt with "only by sustained and organized efforts on the part of the government and the municipality no less than the public at large."

Miscellany.

The Ill Health of Richard Wagner—A Correction.—A typographic error occurs on page 372, line 43, first column, of THE JOURNAL of August 8. Instead of "Any spectacles he could get would have neutralized," etc., read: "Any spectacles he could get would *not* have neutralized," etc.

Are There Too Many Physicians?—There seems to exist a general complaint at present, and it appears to be reflected in medical journals to an extent which shows that the matter is almost universal and one on which there is a certain unanimity of opinion. We allude to the plaintive howl raised by a number of physicians concerning the overcrowding of the profession and the large number of physicians who are practicing medicine or attempting to do so. This wail naturally leads us to inquire whether there are, in reality, too many physicians. Of course, this leads to a critical inquiry into the terms which enter in the proposition, and the first one is as to what constitutes a physician. Any one who calls himself such or who can dignify his name with the affix "M.D." is not necessarily, on that account, a physician. There seems to unfortunately exist an idea that the mere fact of graduating at a medical college makes a physician; when, as a matter of fact, it merely qualifies the individual to begin studying in a rational manner. The title conveyed by the degree, in too many cases, reminds us of the old cynic's aphorism, *doctor sed non doctus*. The recent graduate who assumes learned looks and indulges in technical phrases is soon uncovered, and the veriest tyro soon discovers his deficiencies. He is soon relegated to the great band of physicians who have no practice, and it is this very fact which has led to the mistaken idea that there are too many physicians. Again, there are those who are employed to do what might be termed semi-medical or purely office work, and these certainly can not be looked on in the light of physicians. Another cause of complaint arises from the older members of the profession who are unreasonable in their querulous observations. They forget that they have not kept abreast of the progress made in the medical and surgical sciences and that they have remained in the same old rut, depending on their imperfect methods of examinations and on therapeutics which long ago were abandoned on account of their inefficiency. The younger generation has been trained to exact methods, in scientific diagnosis and modern rational methods of treatment. These causes have naturally contributed to a marked lessening of the practice and diminution in numbers of the patients of the older physicians, who but too often are derisively called "moss-backs." For them, there are too many physicians. They have felt the oncoming of a more competent generation of medical practitioners—*Hinc illæ lachrymæ!* We hardly think that there are too many physicians—we know that there can not be too many good ones. In this matter, as in all others, the law of evolution will hold. The weakest will go to the wall and the better, and, therefore, stronger portion will fittingly exemplify the law of the survival of the fittest.—*St. Louis Med. and Surg. Jour.*

Marriages.

ROBERT GRANGER, M.D., to Mrs. Lulu Howe, both of Cincinnati, August 6.

JACQUES HOLINGER, M.D., to Miss Cora Follen, both of Chicago, July 29.

JAMES S. COVEY, M.D., to Mrs. W. F. Cochran, both of Culleoka, Tenn., August 6.

ELIZABETH JANET CHILD, M.D., Bethel, Vt., to DR. DANIEL FREEMAN of Chicago, August 6.

CARROLL MCGINNIS, M.D., Starbel, Ohio, to Miss Louise Himmelrath of Cincinnati, July 27.

KATE B. GARDNER, M.D., to GEORGE W. HEUMANN, M.D., both of St. Louis, at Clayton, Mo., July 29.

HOWARD J. WILLIAMS, M.D., Muskogee, I. T., to Miss Sarah Annette Barnum of Kansas City, Mo., July 28.

Deaths.

Francis Turquand Miles, M.D. Medical College of South Carolina, 1849, of Baltimore, died, July 30, after a year's illness, from prostatic disease and multiple neuritis, aged 76. After studying in Paris he entered the faculty of his alma mater, filling successively various positions until 1860, when he became professor of physiologic anatomy. He served throughout the Civil War in the Confederate Army, being a surgeon the last year. At the close of the war he resumed his practice, and again visited Europe to study nervous diseases. He removed to Baltimore in 1868. He was appointed professor of anatomy in Washington University Medical School and later professor of anatomy and clinical diseases of the nervous system at the University of Maryland. In 1880 he was transferred to the chair of physiology, from which he resigned in 1903, on account of ill health. Dr. Miles was a member of the Medical and Chirurgical Faculty of Maryland, and had been vice-president. He was president of the American Neurological Association from 1880 to 1882; he was an honorary member of the American Associaton of Physicians, and had been a consulting physician of the Johns Hopkins Hospital since its foundation in 1889.

John Washington Divine, M.D. University of Nashville, Tenn., captain and assistant surgeon in the United States Army during the Civil War, and thereafter a practitioner of Tazewell, Tenn., died at his home in that place, from prostatic disease, July 28, after a long illness, aged 66. The Claiborne County Medical Society, of which Dr. Divine was a member, at a meeting, August 3, passed suitable resolutions in his memory.

Reuben Barney, M.D. Albany (N. Y.) Medical College, 1865, a member of the American Medical Association, the Medical Association of Missouri, and the International Association of Railway Surgeons, some-time president of the Chillicothe Board of Health, and of the city and county and Grand River district medical societies, died at his home in Chillicothe, Mo., July 16, from endocarditis after a short illness, aged 59.

Francis L. Morhard, M.D. Eclectic Medical College of the City of New York, 1896, a dentist of New York City, was instantly killed at his summer home at Stapleton, Staten Island, by an electric shock received while he was presumably endeavoring to adjust an imperfectly insulated wire in his cellar, aged 37.

Headley V. McNeer, M.D. College of Physicians and Surgeons, Baltimore, 1885; Bellevue Hospital Medical College, New York, 1886; a member of the American Medical Association, died at his home in Bramwell, W. Va., July 17, after an illness of two days, supposed to have been due to a ruptured abscess of the kidney.

Joseph Ferguson, M.D. University of Pennsylvania, Philadelphia, 1866, formerly medical director of the Pennsylvania Division, G. A. R.; surgeon of the Lady Franklin Alaska expedition in 1866, and author of "Life Struggles in Rebel Prison," died in Philadelphia, July 25, aged 63.

Fife Fowler, M.D. University of Aberdeen, Scotland, 1858, one of the founders and dean of the Royal College of Physicians and Surgeons, Kingston, Ont., and president of the Ontario Medical Council in 1892, died at his home in Kingston, August 2, aged 80.

George H. Greene, M.D. University of Michigan, Ann Arbor, 1865, a member of the American Medical Association, and once president of the Calhoun County (Mich.) Medical Society, died at his home in Marshall, after an illness of five months, aged 62.

John J. Taylor, M.D., for fourteen years secretary of the La Salle County Medical Society, and once president of the North Central Illinois Medical Association, died at his home in Streator, Ill., August 3, from cancer of the stomach.

James R. Gregory, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1887, Long Point, Ill., died at Las Vegas, N. M., where he had gone in the hope of improving his health, August 1, from consumption, aged about 40.

William V. Tolley, M.D. Central College of Physicians and Surgeons, Indianapolis, 1881, of Indianapolis, died at the isolation hospital in that city from smallpox, July 25, after an illness of several weeks, aged 67.

John E. Sutcliffe, M.D. Bellevue Hospital Medical College, New York, a resident of Louisville, who retired from practice in 1845, on account of defective vision, died at his home in Louisville, July 24, aged 83.

Delos W. Hoskins, M.D. New York Homeopathic Medical College and Hospital, 1895, formerly of Auburn, N. Y., died from consumption at Le Grand, Cal., in July, after an illness of four years.

Joseph Smith Carter, M.D. Ohio Medical College, Cincinnati, 1850, who retired from practice twenty years later on account of ill health, died at his home in Urbana, Ohio, July 27, aged 78.

John Henry Helfrich, M.D. Pennsylvania Medical College, Philadelphia, 1861, died at his home in Allentown, Pa., July 29, from Bright's disease after an illness of six months, aged 83.

Edwin Garrett Hank, M.D. University College of Medicine, Richmond, Va., 1898, died at his home in Tannerscreek, Va., from the effects of the kick of a horse, July 26, aged 27.

Albert Jeremiah Schureman, M.D. New York University, 1872, of Newark, N. J., died at the home of his brother in that city, July 28, after an invalidism of ten years, aged 74.

Amos C. Erskine, M.D. Central College of Physicians and Surgeons, Indianapolis, 1880, died at his home in Indianapolis, July 23, from tuberculosis, after a long illness, aged 55.

Milo Hotchkiss Jones, M.D. Yale University, New Haven, Conn., 1896, died at his home in Greenwich, Conn., from typhoid fever after an illness of one week, July 27, aged 28.

Walter D. Anderson, M.D. Harvard University Medical School, Boston, 1864, president of the local board of health, died at his home in Vallejo, Cal., July 31.

William E. Forest, M.D. New York University, 1876, formerly of New York City, was drowned at Rockaway Beach, July 28, while bathing, at the age of 53.

John C. Luke, M.D. Cleveland Medical College, 1871, for several years postmaster at South Fork, Pa., died at his home in that place, August 2, aged 70.

William Craig, M.D. University of Pennsylvania, Philadelphia, 1871, died suddenly at his home in Mentone, Cal., July 25, from hemorrhage, aged 83.

William H. Coyle, M.D. Cleveland Medical College, 1869, died suddenly at his home in Columbia City, Ind., July 29, from apoplexy, aged 68.

Benjamin Hawker, M.D. Eclectic Medical College of the city of New York, 1875, died at his home in New York City from diabetes, July 31.

Samuel W. Hoover, M.D. University of Michigan, Ann Arbor, 1885, of Fayette, Ohio, died suddenly, July 18, from paralysis, aged 46.

James D. Donnelly, M.D., 1848, died at his home in Mountain City, Tenn., June 18, after an illness of two years and a half, aged 79.

William M. Mercer, M.D. University of Buffalo, 1872, died at his home in Corunna, Ind., July 24, aged 75.

State Boards of Registration.

Pennsylvania Summary.—Of the 392 candidates who recently took the examination before the Pennsylvania State Board of Medical Examiners, 339 were successful, 50 failed to secure the necessary 75 per cent., 1 was expelled for cheating, and 2 withdrew because of illness.

Utah Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports that a written examination was held at Salt Lake City, July 6 and 7, 1903, at which the number of subjects was 10; questions, 80; percentage required to pass, 75; total number examined, 7; all of whom passed.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
1	R.	Coll. of Phys. and Surgs., Baltimore	1903	84 6-7
4	R.	Coll. of Phys. and Surgs., Chicago..	1903	75 1-7
2	R.	Medico-Chirurg. Coll., Kansas City.	1903	84 1-7
3	R.	Rush Medical College, Chicago.....	1903	80 6-7
5	R.	Jefferson Med. College, Philadelphia	1897	85
6	R.	University and Bellevue Hospital Medical College, New York......	1903	88
7	R.	Barnes Med. College, St. Louis....	1901	81 3-7

Rhode Island Report.—Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, July 2 and 3, 1903, as follows: Number of subjects examined in, 7; total number of questions, 70; percentage required to pass, 75; total number examined, 27; number passed, 20; number failed, 7.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
217	R.	Syracuse University, Medical Dept..	1902	76.9
218	R.	University and Bellevue Med. College	1901	83.5
221	R.	University of the South, Med. Dept..	1903	74.4
222	R.	Univ. of Pennsylvania, Medical Dept.	1903	81.6
225	R.	University of Vermont, Medical Dept.	1898	77.9
238	R.	University of Vermont, Medical Dept.	1898	79.6
219	R.	Harvard University, Medical Dept..	1902	89.7
224	R.	Harvard University, Medical Dept..	1902	77.9
226	R.	Harvard University, Medical Dept..	*	76.1
243	R.	Harvard University, Medical Dept..	1903	84.5
236	R.	Harvard University, Medical Dept..	1901	88.3
227	R.	Coll. of Phys. and Surgs., Baltimore.	1903	85
242	R.	Coll. of Phys. and Surgs., New York.	1903	80.3
228	R.	Detroit College of Medicine and Surg.	1903	78.1
229	R.	Laval University, Medical Dept.....	1903	75.1
230	R.	Jefferson Medical College...........	1903	82
231	R.	Jefferson Medical College...........	1903	78.6
237	R.	Jefferson Medical College...........	1903	82.6
232	R.	Bowdoin Medical College...........	1902	76.5
233	R.	Cornell Medical College............	1903	86.1

FAILED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
220	R.	University of Naples..............	1899	66
234	R.	University of Naples..............	1899	63.4
223	R.	Baltimore Medical College..........	1903	71.9
241	R.	Baltimore Medical College..........	1903	72.7
235	R.	Illinois Medical College............	1902	73.5
239	R.	Victoria University, Medical Dept...	1884	69.4
240	R.	Jefferson Medical College..........	1903	71.9

* Undergraduate, third year.

Delaware Report.—Dr. P. W. Tomlinson, Wilmington, secretary of the Medical Council of Delaware, reports for the medical examining board representing the Medical Society of Delaware, that a written examination was held at Dover, June 16 to 18, 1903, at which the number of subjects examined in was 10; total questions, 90; percentage required to pass, 75; total number examined, 7; number passed, 3; number failed, 4.

Candidate	Sch of Pract.	College.	Year Grad	Per Cent.
		PASSED		
136	R	Woman's Medical College, Baltimore.	1902	84.6
137	R.	Medico Chirurgical College, Baltimore	1903	79.2
135	R	Baltimore Medical College... . ..	1903	80.8
		FAILED		
133	R	Baltimore Univ. School of Medicine..	1903	68.4
132	R	Maryland Medical College..........	1903	68
134	R	Maryland Medical College	1902	64
131	R	Jefferson Med College, Philadelphia.	1902	69.6

South Dakota Report.—Dr. H. E McNutt, Aberdeen, reports for the South Dakota Board of Medical Examiners, that a written examination was held at Sioux Falls, July 8 to 10, 1903, at which the number of subjects examined in was 10; total questions, 80; percentage required to pass, 75; total number examined, 20; number passed, 17; number failed, 3

Candidate	Sch of Pract.	College	Year Grad.	Per Cent
		PASSED		
1	R	Rush Medical College, Chicago . .	1901	87
2	R	Rush Medical College, Chicago .	1903	97
3	R	Rush Medical College, Chicago.	1888	79
4	R	Rush Medical College, Chicago .. .	1901	80
5	R	University of Minnesota..	1903	93
6	R	University of the City of New York ..	1892	80
8	R	University of Missouri..	1903	85
16	R.	University of Nebraska, Omaha . ..	1903	85
7	R	Coll of Phys and Surgs, New York City	1894	83
9	R.	College of Phys and Surgs, Chicago..	1903	87
10	R	Louisville Medical College, Kentucky.	1890	89
11	R.	Johns Hopkins University. .	1903	90
12	R	Northwestern Univ Med Schl, Chicago	1903	95
13	R.	Northwestern Univ. Med Schl, Chicago	1903	86
14	R.	Jefferson Medical College, Philadelphia	1903	85
15	R.	Sioux City College of Medicine	1903	78
17	E.	Lincoln (Neb) Medical College .	1903	88
		FAILED		
18	R	Omaha Medical College.	1899	.
19	R.	Sioux City College of Medicine	1903	.
20	R	Medical College of Alabama. . .	1884	.

EXAMINATION QUESTIONS.

Lists of Questions Asked at State Board Examinations.

We give below the questions asked by the Ohio State Board of Medical Registration and Examination at Columbus, June 23-25, 1903 The record of the students in this trial was given in The Journal, August 8.

Hereafter, as space will permit, we shall occasionally publish the questions of different state examining boards

ANATOMY.

1 Describe the clavicle and scapula 2 Describe the sacrum and coccyx. 3. Describe and illustrate the different classes of articulations. 4 Describe the hip joint, its ligaments and its synovial membrane 5 Name and give origin of the muscles of the posterior tibial region (superficial group) 6 Name and give origin of the muscle of the anterior scapular region 7 Give the origin and distribution of the ulnar artery 8 Describe the deep veins of the lower extremity 9 Describe the cecum 10 Describe the pleura

PHYSICAL DIAGNOSIS

1. Give the signs of aortic valvular obstruction, with hypertrophy of the left ventricle 2 How determine whether a cardiac murmur occurs with the first or second sound of the heart? 3 Differentiate between a pleuritic and a pericardial friction sound 4 Differentiate between a pericardial effusion and a pleural effusion on the left side 5 By what signs may ascites arising from disease of the kidneys be distinguished from that due to disease of the heart or liver? 6. Differentiate paralysis of the facial nerve due to a central lesion from one due to a peripheral lesion 7 Make a differential diagnosis of tumor of the right kidney from tumor of the liver 8 What would you elicit in an examination of the chest of a patient with advanced phthisis? 9 What are the signs of a dilated stomach? 10 Give the normal boundaries of the liver

CHEMISTRY

1. Define chemical incompatibility and give example 2 Give chemical formula of three acids 3 Describe "K" and its principal salts. 4. How is a salt formed? 5 Describe "Na" and its principal salts 6 Differentiate organic and inorganic chemistry and give an example of each 7. Explain the difference between a carbonate and a bicarbonate 8 Give formulas and describe calomel and bichlorid 9 Give tests for acids and alkalies 10 Give tests for arsenic.

MATERIA MEDICA

1. Creosote—from what is it obtained? What is its physiologic action? 2 What are the indications for creosote, its doses, and how is it administered? 3 Ipecac—physiologic action, indications and doses 4 Chloral hydrate—physiologic action, indications and doses 5 Phenacetin—physiologic action, indications, doses and uses 6 Oxygen—in what condition and how is it used? 7 Serum therapy—on what scientific principle is it based? 8 Antidiphtheritic serum—how is it obtained and how used? 9. Anesthetics—mention those most generally used and what are the dangers attending their use? 10. Local anesthesia—how is it produced?

PHYSIOLOGY.

1. In what do physiology and pathology differ? 2 How are the functions of the body classified? 3 Define the digestive process. 4 Describe the portal circulation 5 What is chyle and how does it differ from lymph? 6 What is the coloring matter of the blood and its function? 7. How does the pneumogastric nerve influence the heart beat? 8 How is the temperature of the body kept at the standard? 9 What are the functions of the skin? 10. State the functions of the first two cranial nerves

OBSTETRICS

1. Define natural labor. 2 What precautions should be taken before and during the first examination in labor? 3. How would you manage a case of prolapsed cord? 4. What is dry labor and what are its difficulties and dangers? 5. How would you diagnose and manage a case of placenta previa? 6 Under what circumstances would you use a douche after labor or during the lying in? 7. Define and describe involution. 8 What are some of the causes of mastitis? How should it be treated? 9. When should the cord be cut, and how dressed? Describe the process 10 What should be done with a child prematurely born?

SURGERY.

1. Describe the application of the plaster-of paris jacket 2 How should fracture of the olecranon be treated? 3 Give causes and symptoms of adenitis 4 What is saline transfusion and how is it performed? 5. What is asepsis and how would you secure it? 6 Describe the Trendelenburg position and its uses 7 How would you treat a penetrating gunshot wound of the abdomen? 8 How is suprapubic lithotomy performed? 9 What is the difference between true and false ankylosis? 10. What do you understand by intubation, and under what circumstances is it of use?

GYNECOLOGY.

1. Give symptoms, diagnosis, prognosis and treatment of acute metritis 2 What is chronic endometritis, its causes and treatment? 3. Give etiology, symptoms and diagnosis of carcinoma uteri 4. Give differential diagnosis of abdominal ascites and large ovarian cysts 5. Give palliative treatment of retroversion of uterus.

DISEASES OF CHILDREN.

1. Differentiate between varicella and smallpox 2 Give the technic of vaccination 3 Differentiate enterocolitis from cholera infantum. 4. Differentiate catarrhal from lobar pneumonia. 5 Symptoms of hydrocephalus

PRACTICE AND PATHOLOGY.

1 Give four causes of a persistent polyuria, and the results of a urinary examination 2. Differentiate between gastralgia, gastric ulcer and gastric carcinoma. 3 Outline management of a case of organic cardiac lesion, with lost or broken compensation. 4. Describe the lesion and location in tabes dorsalis, and the signs by which the disease may be recognized 5. What is ascites? Give causes, differential diagnosis and treatment. 6 What is cystitis? Give symptoms, diagnosis and treatment 7. How diagnose and treat a case of diphtheria? 8 What does the word dysentery mean? Give symptoms and diagnosis of a case? 9. What do you understand by the terms symptoms, signs and periods of incubation and prodromes of disease? 10. Define erysipelas. Describe its course and give indications for three remedies.

Medical Organization.

Floyd County (Iowa) Medical Society.

Twelve physicians met at Charles City, July 24, and took preliminary steps toward reorganizing along the lines suggested by the American Medical Association. Dr. Semun R. Hewett acted as chairman and Dr. James J Daly, as secretary, both of Charles City.

Audubon County (Iowa) Medical Society.

The physicians of Audubon County met in Audubon, July 21, organized a county medical society, adopted the constitution and by-laws recommended by the American Medical Association, and elected the following officers: Dr. H. P. Lauritzen, Exira, president; Dr. Ratford F Childs, Audubon, vice-president; Dr. Daniel Jackson, Audubon, secretary-treasurer, and Drs A. L Brooks, Audubon, Nathaniel L A. K. Slamberg, Kimballton, and Daniel G. Loss, censors.

Waupaca County (Wis) Medical Society.

Physicians of Waupaca County met at Waupaca, July 28, with Dr John F. Pritchard, Manitowoc, councilor for the Eighth District, aand organized a county society to be in affiliation with the state and National organizations. The following officers were elected: Dr. Levi H. Pelton, Waupaca, president; Dr Thomas W. Trimble, Waupaca, vice-president; Dr. J. Fremont Corbett, Weyauwega, secretary-treasurer, and Drs. Bruno G. Jurgensohn, Manawa, J. Fremont Corbett, Weyauwega, and Carl A. Sander, Waupaca, censors.

MEDICAL SCHOOLS OF THE UNITED STATES.

Below is given a brief description of every college in the United States that is legally chartered to confer the degree of doctor of medicine, and whose diploma is recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The information given is, as a rule, obtained from the catalogues and has been submitted to the dean of each school for his inspection and approval. Colleges which belong to the American or the Southern Medical College Association or other organization of colleges have requirements for admission of students according to the rules of these associations, unless their requirements are higher, in which case a statement is made to that effect. Extracts from these rules are given at the close of the list of colleges.

ALABAMA.

Alabama, population 1,828, 697, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College, located in Mobile and in Birntingham. The population of each city is over 38,000 and board and room may be obtained for from $12 to $20 per month.

Mobile.

Medical College of Alabama.—This is the Medical Department of the University of Alabama, organized in 1859. The City Hospital furnishes free clinical material. The faculty consists of 9 professors and 9 lecturers, 18 in all. It is well equipped with buildings, laboratories, dispensary, etc. It is a member of the Southern Medical College Association. The course of study covers four years of six months each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. George E. Ketchum. Total registration, 1902-3, 145; graduates, 12. The thirty-eighth session will begin Oct. 8, 1903, and will close April, 1904.

Birmingham.

Birmingham Medical College.—This school was incorporated in 1894 and is situated in Birmingham, a manufacturing town of 38,415. The clinical advantages are good. The Hillman, St. Vincent's, Pratt and County hospitals are accessible to the students. The laboratories are well equipped. There are 19 professors and 13 assistants, total, 32. The school is a member of the Southern Medical College Association. The course of instruction embraces four separate sessions of six months each. The fees are $75 for each of the first three years and $105 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1902-3, 94; graduates, 22. Next session opens Oct. 1 1903, and closes April 1, 1904.

ARKANSAS.

Arkansas, population 1,311,564, has one medical college, located in Little Rock. Board and lodging costs from $13 to $18 per month.

Little Rock.

Medical Department of the Arkansas University.—This college is located at Little Rock, population about 60,000. It was organized in 1880 as the Arkansas Industrial University Medical Department. It is a charter member of the Association of American Medical Colleges. Hospital facilities are furnished by Logan H. Roots Memorial Hospital, St. Vincent's Infirmary and Pulaski County Hospital, the latter having a capacity of 200 beds. The teaching body consists of 13 professors and 23 lecturers and assistants, total 36. Dr. F. L. French, Little Rock, is Secretary. The fees are: Matriculation $5, paid but once; annual fees $60, and graduation $25. Total number of students at last session, 236; graduates, 12. The next course of lectures begins Oct. 19, 1903, and ends April 19, 1904.

CALIFORNIA.

California, population 1,485,053, has seven medical colleges. Five are located in San Francisco, a city of about 400,000 inhabitants. They are Cooper Medical College, Medical Department of the University of California, California Medical College, Hahnemann Medical College of the Pacific, and the College of Physicians and Surgeons. The clinical facilities of San Francisco are good; board and lodging can be obtained for from $20 to $30 a month. The College of Medicine of the University of Southern California is situated in Los Angeles, population 102,479. Board and lodging can be obtained in that city for $4 a week and upward. The Oakland College of Medicine and Surgery is in Oakland, a suburb of San Francisco.

San Francisco.

Cooper Medical College.—This school was organized in 1858. though its present name was not adopted until 1882. The faculty consists of 12 professors and 28 lecturers, instructors, etc., 40 in all. Lane Hospital, adjoining the college, the City and County Hospital, containing 464 beds, and the college dispensary furnish clinical material. The requirements for admission are a certificate showing that applicant has passed the regular examination for admission to the University of California, or its equivalent, or graduation from an accredited high school or academy, or its equivalent. The college itself does not hold entrance examinations. The college building supplies large laboratory and lecture-room facilities. The curriculum covers a graded course of four years of eight months each. Fees: Matriculation, $5; course fee for each year, $150; breakage deposit each year, $10; graduation fee, $25; no other charges. The Dean is Dr. Henry Gibbons, Jr. Total registration for 1902-3 was 212; graduates, 45. The next session opens Aug. 15, 1903, and will close April 26, 1904.

Medical Department University of California.—This department of the State University was organized in 1872, and has a faculty composed of 20 professors, 50 associates and assistants, a total of 70. The City and County Hospital, which admits students of this school not only to the clinics proper, but also to its wards for study, and the college dispensary furnish good clinical material. The course covers graded work for four years of nine months each This school is a member of the Associatioon of American Medical Colleges. In 1905 two full college years' work will be required of all applicants for admission. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean is Dr. Arnold A. D'Ancona. Total registration for 1902-3 was 115; graduates, 26. The thirty-first session opens Aug. 7, 1903, and will close May 14, 1904.

College of Physicians and Surgeons of San Francisco.—This school was organized in 1896 and has a faculty of 23 professors and 23 associate professors and teachers, a total of 46. The hospital facilities consist of the City and County Hospital, the California General Hospital, with 50 beds, and St. Winifred Hospital, with 50 beds. The daily clinics at the new college building furnish abundant material of every description. Applicants for matriculation must show an equal amount of work done or pass a satisfactory examination in English, history and government, geography, physics, mathematics and Latin, grammar and translation. The college building recently completed is well supplied with laboratories and lecture rooms. This college now conducts a continuous course of medical instruction. Each year is divided into four quarters of three months each, and known as the autumn, winter, spring and summer quarters. Students may enter at the beginning of any quarter. Attendance on 12 quarters will be required, and at least 45 months must elapse between the beginning of the first course and the time of graduation. Fees, $30 per quarter. The Dean is Dr. D. A. Hodghead. Registration for 1902-3 was 146, of these 28 graduated in medicine. The autumn quarter opens Sept. 1, 1903, and closes May, 1904.

California Medical College.—Eclectic. This school was organized in 1878. Its faculty includes 14 professors and 14 lecturers and instructors, a total of 28. The clinical material is supplied by the Buena Vista and City and County hospitals. Applicants for admission not holding diploma or certificate are examined. The course has been extended to cover four years of eight months each. Total fees are about $110 for each of the first three years and $40 for the fourth year. The Dean is Dr. Maclean. *Total registration for 1902-3 was 60; graduates, 7.*

Hahnemann Medical College of the Pacific.—Homeopathic. This was organized in 1884, and has a faculty of 19 professors and 23 lecturers, instructors, etc., in all 42. The Pacific Homeopathic Polyclinic, the Homeopathic Sanatorium, the San Francisco Nursery for Homeless Children, Marie Kip Orphanage, accommodating, respectively, 45, 75 and 120 beds; Fabiola Hospital and the City and County Hospital, furnish the clinical material for study. Matriculants must possess the equivalent of a high school education. One year after entrance is permitted in which the student may complete conditions in Latin. The college is registered and accredited with New York State Regents. The course includes four years of seven months each. Total fees for the first year, $155, and $100 for each of the other three years. The Dean is Dr. James W. Ward. Total registration for 1902-3 was 38; graduates, 12. The *twenty-first* session opened March 6, 1903, and will close Oct. 31, 1903.

Oakland.

Oakland College of Medicine and Surgery.—The second session of this new school will begin Sept. 1, 1903, and end April 30, 1904. The Registrar is Dr. Edward N. Ewer. The faculty numbers 21. Tuition is about $115 yearly. There were 6 students last session, all in the freshman class.

Los Angeles.

College of Medicine, University of Southern California.—This school was organized in 1885, and has a faculty of 27 professors and 7 instructors, etc., 34 in all. The County Hospital, having 200 beds, and a college dispensary furnish clinical material. Applicants for admission are required to pass an examination in English, arithmetic, elementary algebra, physics and Latin equal to one year's work, unless they can show by certificate that they have covered that ground. The building is amply provided with laboratories and lecture rooms. A graded course, covering four years of thirty-two weeks each, is offered. The total fees for the first year are $145; second and third, $130 each, and $40 for the fourth year. The Dean is Dr. James H. McBride. Total registration for 1902-3 was 106; graduates, 27. The next session opens October, 1903, and closes June, 1904.

COLORADO.

Colorado, with a population of 539,700, has three medical colleges. Two of these, Denver and Gross College of Medicine and Denver Homeopathic College, are in Denver, which has a population of about 175,000, the other, the Colorado School of Medicine, is at Boulder (population 6,150). The clinical facilities in Denver available to the two colleges are the Arapahoe *County Hospital, which has a capacity of 225 beds*; St. Joseph's

Hospital, with 200 beds, and St. Luke's Hospital, with 75 beds. The Public Library contains 10,000 volumes on medicine. Board can be obtained in Denver for $5 a week and upward.

Denver.

The Denver and Gross College of Medicine.—This is the Medical Department of the University of Denver, and was organized in 1902 by the union of the Gross Medical College (organized 1887) and the Denver College of Medicine (organized 1880). The clinical advantages are the college dispensary, the Arapahoe County Hospital, St. Luke's Hospital, St. Anthony's Hospital, St. Joseph's Hospital, National Jewish Hospital for Consumptives, Home for Dependent Children and the City Contagious Hospital and Mercy Sanitarium. The faculty is made up of 38 professors, 45 assistants and instructors, a total of 83. Its location is central and the buildings are well arranged for laboratory, dispensary and didactic work. The course is graded and covers four years of eight months. The college is a member of the Association of American Medical Colleges. Final examinations at the end of each year are held. Fees for the first year are $115. For the second year $116. Third year $101. Fourth year $126. Total registration, 1902-3, 130; graduates, 33. The twenty-third session will begin Sept. 15, 1903, and close May 16, 1904. The Dean is Dr. S. G. Bonney.

Denver Homeopathic College.—This college, organized in 1894, beside clinical privileges in the Arapahoe County Hospital, has exclusive privileges for clinical work in the Denver Homeopathic Hospital, the Haven and the Belle Lenox Nursery. The faculty numbers 25 professors and 7 lecturers and instructors, 32 in all. The requirements for admission are, "possession of a diploma from a literary college, university, an academy, a normal or high school; a first-grade teacher's certificate, or a previous matriculation at some reputable literary or medical college." The course of study consists of four years of seven months each; monthly examinations are held in each subject. A five-year scholarship may be had for $300, payable in advance, otherwise the tuition is $100 a year; there is a matriculation fee of $5, payable once. The Dean is Dr. James P. Willard. Total registration for 1902-3 was 29; the number of graduates, 6. The ninth session begins in September, 1903, and will close April, 1904.

Boulder.

Colorado School of Medicine.—This is the Medical Department of the University of Colorado, and was opened in 1883. The University Hospital, under the control of the state, is equipped to accommodate 40 patients and furnishes free clinical material. Both hospital and dispensary clinics are offered and the sanatorium located in Boulder offers additional advantages in this line. The faculty embraces 15 professors and 12 lecturers and assistants, a total of 27. The laboratories are well equipped and commodious. A separate building is devoted to the study of anatomy and another one is used for medical work exclusively. A complete four-year course of study in a recognized high school, or its equivalent, is required for admission. This school is a member of the Association of American Medical Colleges. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. Luman M. Giffin. Total registration for 1902-3 was 63; graduates, 8. The twenty-second session begins Sept. 14, 1903, and closes June, 1904.

CONNECTICUT.

Connecticut has a population of 908,420, and contains one medical college, located in New Haven, population 115,000. Board and lodging cost $4.50 and upward per week.

New Haven.

Yale Medical School.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. In 1879 a new charter changed the name to the one now used, and in 1884 the Connecticut Medical Society, which, from the granting of the first charter, had taken an active part in its control, released itself from a further responsibility and the University authorities assumed full control. The clinical advantages are embraced under the New Haven Hospital, which contains 150 beds and is the general hospital for New Haven; the Springside Hospital, which is connected with the city almshouse, and the State Hospital for the Insane, which, with its 1,800 patients, offers an opportunity for special instruction in insanity in addition to the clinics. Besides these, the University has just completed a $100,000 building for the dispensary service, which offers good material for clinical teaching. The faculty embraces 13 professors, 5 lecturers, 12 instructors, and 22 assistants, a total of 52. The lecture rooms and laboratories are large and well equipped. Matriculants are admitted without examination, provided that they have received a degree in arts or sciences, that they present certificates showing that they have successfully prosecuted the subjects of the examination at some college, high school, academy, or preparatory school approved by the faculty, or that they have passed matriculation examinations equivalent to those required, at some approved professional school. This school is a member of the Association of American Medical Colleges. The course covers a four-year graded curriculum, eight months constituting a school year; the first two years the fundamental branches are studied, the third year is devoted to a systematic teaching of medicine, surgery, obstetrics and pharmacology, and in the fourth year clinical work, with medicine, surgery and the specialties, is presented. The fees are $150 each year; in the first year there are additional fees amounting to $18, and in the second, $8, and there is a graduation fee of $10. The Dean is Dr. Herbert E. Smith, New Haven. During the session of 1902-3 there were 145 matriculants and 27 graduates. The ninety-first session opens Sept. 24, 1903, and closes June 23, 1904.

DISTRICT OF COLUMBIA.

Washington, population, 278,718, has four medical colleges: Medical Department of Columbian University, Georgetown University School of Medicine, Howard University Medical Department and National University Medical Department. Washington offers to the student of medicine many advantages. The Army Medical Museum, the Museum of Hygiene, the National Museum, the library in the Surgeon-General's office, the Toner Medical Library and Museum of Hygiene, in all over 125,000 volumes on medicine, open to the medical student a most profitable field. The clinical advantages offered by the various hospitals are good. Owing to the many boarding houses and hotels, board and lodging can be had at extremely reasonable rates.

Washington.

Columbian University, Department of Medicine.—This school was organized in 1821. Columbian University Hospital, under the immediate control of the faculty, gives the students of this school exclusive clinical advantages. In addition, Central Dispensary and Emergency Hospital, Lutheran Eye and Ear Infirmary, Episcopal, Garfield, Children's, Providence, Columbia and St. Elizabeth's hospitals, all permit of abundant opportunity for clinics and clinical material. The faculty is composed of 26 professors and 30 demonstrators and assistants, 56 in all. This school is a member of the Association of American Medical Colleges. The equipment and facilities for laboratory, didactic and clinical work are good. The completion of graded work covering the period of four years, eight months to the school year, is required; semi-annual examinations are held. Total fees for each year are $110. The Dean is Dr. E. A. de Schweinitz, 1325 H St., N. W. New and enlarged buildings for both college and hospital have been completed. Registration for 1902-3 was 260; graduates, 34. The eighty-second session begins Sept. 30, 1903, and closes June 1, 1904.

Georgetown University School of Medicine.—This school, organized in 1850, controls the Georgetown University Hospital, which affords excellent facilities for clinical teaching and ward classes. Clinics are also held for the benefit of the students in Providence Hospital, containing 300 beds; in the Children's Hospital, the Central Dispensary, Emergency Hospital and the Garfield Hospital. Attendance on clinical instruction is obligatory in the third and fourth years. The faculty contains 26 professors, 27 instructors and assistants, total 53. This school is a member of the Association of American Medical Colleges. The building is conveniently located and contains spacious and well-ventilated lecture rooms, laboratories and library; the laboratories are equipped with the most approved instruments and appliances. The complete course of study extends over four terms of eight months each Examinations are held at the end of each session. The fees are $110 each year. The Dean is Dr. George M. Kober, 1600 T St. The registration for 1902-3 was 144; graduates, 22. The next term opens on Sept. 29, 1903, and ends May 31, 1904.

Howard University Medical Department.—This institution was organized in 1867 and "in conformity with the spirit of the organic law of the University, is open to all, without regard to sex or race, who are qualified by good moral character, proper age and suitable education." The removal of any racial distinction has been taken advantage of by colored students, who compose a majority of those in attendance, but a number of white students are also receiving instruction. The Freedman's Hospital and Asylum is a general hospital of 300 beds. The faculty comprises 15 professors and 20 lecturers and assistants, 35 in all. This college is a member of the Association of American Medical Colleges. Students are required to attend four courses of lectures in separate years of seven months each. The fees of each session are $80, plus $2 per part for dissecting material. Board can be had at the school dining hall for $9 a month, and a room in the dormitory for $15 a term. The Dean is Dr. Robert Reyburn, 714 13th St. N. W. Registration for 1902-3 was 141; graduates, 29. The thirty-sixth session begins Oct. 1, 1903, and closes May, 1904.

National University Medical Department.—We are unable to furnish information concerning this school, as repeated letters to different officials have failed to elicit any reply. In our statistical table we use the same figures as were used last year, assuming that they are approximately correct. The school was organized in 1884 and has a faculty of about 37. The course consists of four years of eight months each.

GEORGIA.

Georgia, population 2,216,331, has three medical colleges: Medical College of Georgia, located in Augusta (population, 39,441); Atlanta College of Physicians and Surgeons, and Georgia College of Eclectic Medicine and Surgery, both in Atlanta (a manufacturing city of 89,872 population). Board and lodging may be obtained for from $3 to $5 per week.

Augusta.

Medical College of Georgia.—This school was organized as a medical academy in 1829, and in 1873 was made the Medical Department of the University of Georgia. Its faculty includes 12 professors and 12 assistants, 24 in all. The course is four years of six months each. Applicants for admission must, by examination, certificate or diploma, show that they possess educational qualifications equal to those required for second grade teachers in public schools; if they are deficient on examination, however, they are admitted, and they may remove the conditions any time before they appear for graduation. The City Hospital, with 130 beds; Lamar Hospital, with 80 beds; the Polyclinic and the Hospital for Contagious Diseases supply clinical material. Fees for the first two years are $75 each; third year, $100, and 130 for the last year. The Dean is Dr. DeSaussure Ford. Total enrolment for 1902-3 was 110; graduates, 7. The seventy-second session opens Oct. 1, 1903, and closes April, 1904.

Atlanta.

Georgia College of Eclectic Medicine and Surgery.—This was organized in 1839, and has a faculty of 12. The college dispensary and Grady Hospital furnish clinical material. Applicants for admission must adhere to the requirements established by the

National Confederation of Eclectic Colleges of which this college is a member. The curriculum covers four years of six months each. The Proctor is Dr. W. M. Durham, 77½ Peachtree St. Total number of students for 1902-3 was 46; graduates, 2. The next session opens Oct. 1, 1903, and closes April 1, 1904.

Atlanta College of Physicians and Surgeons.—This school was formed in 1898 by the consolidation of the Atlanta Medical College, organized in 1854, with the Southern Medical College, organized in 1879. It has a faculty of 14 professors and 20 assistants, a total of 28. Clinical facilities are furnished by the Grady Hospital, which is the general hospital for Atlanta; clinics are free to the graduating class. First course students are required to "give satisfactory evidence to the faculty of such educational qualifications as will be deemed necessary for the successful prosecution of their medical studies. These requirements will be similar to those of other reputable medical colleges in the country." The course of study covers four years of six months each and is graded. The buildings are large and a new building for practical anatomy has just been added. Fees: First and second years, $75 each; third and fourth, $100 each. The Dean is Dr. W. S. Kendrick, 71 Washington St. Total registration of students for 1902-3 was 200; graduates, 34. Next session begins Oct. 1, 1903, and closes April, 1904.

ILLINOIS.

Illinois, population 4,821,550, has 14 medical colleges. They are all located in Chicago, a city of about 1,900,000 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, Chicago Homeopathic Medical College, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Harvey Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University and American College of Medicine and Surgery. Room and board cost $3 a week and upward.

Colleges in Illinois have to admit students in conformity with the minimum requirements of the Illinois State Board of Health, as follows: "A diploma or certificate of graduation from a high school; or a certificate signed by a principal of a regularly organized high school or by the examiner of the faculty of a recognized literary or scientific college or university, or by the state superintendent of public instruction, or a superintendent of public schools, of having successfully passed an examination in all the several branches embraced in the curriculum of a four years' high school course. The matriculation examination shall not be conducted by any member of the faculty of the medical college. The Illinois State Board of Health will require each applicant for a state certificate to present documentary evidence of his preliminary education, together with his medical diploma, when taking the examination of the board." These conditions will govern all persons admitted to the freshman year on or after Jan. 1, 1903.

Chicago.

Rush Medical College.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 to 1898, and in the latter year became affiliated with the University of Chicago. The faculty is composed of 22 professors, 144 associates, instructors, etc., a total of 166. Good clinical facilities are furnished by Cook County Hospital, caring for about 20,000 patients yearly; Presbyterian Hospital, with 250 beds; a college dispensary, and an obstetric department. In addition to these, extramural clinical courses are offered at the West Side Hebrew Dispensary, St. Luke's Hospital, St. Anthony's Hospital, the Alexian Brothers' Hospital, Illinois Charitable Eye and Ear Infirmary and Chicago Isolation Hospital. Bedside instruction is given. The requirements for admission are those of admission to the better universities or colleges and, in addition thereto, one and one-third years of college work. For the sessions of 1904 there will be required a certificate of admission to the third academic year of an accredited university. By the addition of a recently completed seven-story building, the facilities for clinical instructions are largely increased. The laboratories and their equipment are unexcelled. The curriculum covers graded work for four years of three quarters each, a quarter being three months. A continuous session is held, but credit for more than three quarters can not be obtained in any calendar year. A combined course for six years confers degrees of both science and medicine. All freshmen and sophomore studies are given at the University of Chicago. The total regular fees are $172.50 this year, but it is designed to gradually increase the fees to $200 per year. However, students in continuous attendance, i. e., three quarters in twelve months, may complete their course by paying the fees in vogue when they first enter the college. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Deans are Dr. Frank Billings, 100 State St., and Dr. John M. Dodson, 34 Washington St. Total registration, 1902-3, was 1,047; graduates, 220. The fiscal year begins July 1; final examinations are held at the end of each year.

Northwestern University Medical School.—This school was organized in 1859 as the Medical Department of Lind University, became independent as the Chicago Medical College in 1864, and in 1869 assumed its present relation as Medical Department of Northwestern University. The faculty comprises 41 professors and 67 assistants and instructors, in all, 108. The newly completed Wesley Hospital, with 225 beds; Mercy Hospital, containing 400 beds; Provident Hospital, 100 beds; St. Luke's, 200 beds, and a college free dispensary furnish opportunities for clinical study to students of this college exclusively. Cook County, and the Chicago Lying-in hospitals are also open to them for study. Applicants for admission must, by diploma, certificate or examination, show possession of the educational acquirements required to enter the College of Liberal Arts of Northwestern University. This school is a member of the Association of American Medical Colleges. The laboratory and lecture-room facilities are ample and the equipment is good. The course of study covers graded work for four years of thirty-six weeks each. Optional summer laboratory and clinical courses are also given. Final examinations are held at the end of each semester. The fees for each year are $165 and a matriculation fee of $5, paid once, is charged. The Dean is Dr. N. S. Davis, Jr., 65 Randolph St. The total registration for 1902-3 was 608; graduates, 127. The next session opens October, 1903, and closes June, 1904.

College of Physicians and Surgeons.—This school was organized in 1881, and in 1896 became the Medical Department of the University of Illinois. The faculty is composed of 43 professors, 90 assistants and instructors, a total of 133. The West Side Hospital, containing 125 beds; Cook County Hospital, and a college dispensary and maternity clinic supply most of the clinical material, but under certain conditions students of this school are admitted to the following hospitals for clinical study: Augustana, Baptist, Chicago, Woman's, Samaritan, Alexian Brothers', St. Mary's, and the Chicago Lying-in. This school is a member of the Association of American Medical Colleges. A magnificent building has recently been added to the college, and the laboratory, amphitheater and lecture-room space and equipment are excellent. The collegiate year is divided into two terms: the winter term of thirty-two weeks and the summer term of twelve weeks, of actual teaching. Attendance on the winter term is required in order to secure credit for a year's work, and attendance on four winter terms is required for graduation, except for students who are admitted to advanced standing. Attendance on the summer term is optional, and the work is supplementary to the work of the winter term. Students may obtain credit for work done in certain branches, but attendance on this term does not apply on the required thirty-two months' attendance necessary for graduation. The fees are $145 each for the first two years, $130 for the third and $155 for the fourth year. The Dean is Dr. William E. Quine, 103 State St. Total registration for 1902-3 was 685; graduates, 216. The fall term begins Oct. 1, 1903.

Hahnemann Medical College.—Homeopathic. This was organized in 1855, and has a faculty of 60. Hahnemann Hospital and a college dispensary supply clinical material. The requirements for admission are a high school diploma or its equivalent. The course is four years of seven months each. Fees: Matriculation, paid once, $5; each term, $50, and hospital tickets, $5 each for third and fourth years. The Registrar is Dr. W. Henry Wilson. Total registration, 1902-3, 195; graduates, 69. The next session begins Sept. 27, 1903.

Bennett College of Eclectic Medicine and Surgery.—This school, organized in 1868, has a faculty of 32 professors and 5 assistants, 37 in all. The Bennett, Cook County and Baptist hospitals and a college dispensary supply clinical facilities. Matriculants must present a diploma or certificate or pass a satisfactory examination "in conformity with the minimum requirements of the State Board of Health." The course covers four years of twenty-six weeks each. This school is a member of the National Confederation of Eclectic Medical Colleges. Fees for each year are $100, with a matriculation fee, paid once, of $5. The Dean is Dr. A. L. Clark, Elgin, Ill. Total registration, 1902-3, was 113; graduates, 18. The thirty-sixth session begins Sept. 22, 1903, and ends May 11, 1904.

Chicago Homeopathic Medical College.—This was organized in 1876, and has a faculty of 19 professors and 44 adjuncts, lecturers, etc., a total of 63. The Chicago Homeopathic and Cook County hospitals, together with a college dispensary, furnish clinical material. Applicants for admission must show by certificate from high school, or its equivalent, a sufficient knowledge of English, arithmetic, algebra, physics, United States history, geography, botany and Latin, equivalent to a year's study. The course covers four years of seven and one-half months each. Total fees are about $110 for each year. The Dean is Dr. W. M. Stearns, 87 Wabash Ave. Total registration, 1902-3, was 130; graduates, 37. The next session opens September, 1903, and ends April, 1904.

Hering Medical College.—Homeopathic. This school was organized in 1892. Dunham Medical College, organized in 1895, was consolidated with this school in August, 1902. The faculty comprises 28 professors and 16 associates, lecturers, etc., in all 44. Hering College Hospital, Baptist and Cook County hospitals supply clinical facilities. The course covers four years of seven months each. The total fees for a full course are $300 if paid in advance, or $100 per year. The Dean is Dr. J. T. Kent, 92 State St. Total registration for 1902-3 was 90; graduates, 22. The twelfth session begins Sept. 8, 1903, and ends April 11, 1904.

Jenner Medical College.—This is a day and evening school, organized in 1892. The faculty consists of 46 professors and 7 assistants, 53 in all. Cook County Hospital and college dispensary supply clinical material. The course covers four years of 40 weeks each and embraces laboratory, didactic and clinical instruction. The total fees each year are $100, with a $5 matriculation fee, paid but once. The Registrar is Dr. C. Shorman, 163 Randolph St. Total enrolment for 1902-3 was 107; graduates, 13. The next session begins September, 1903, and will end June, 1904.

Harvey Medical College.—This is a night school, organized in 1891. The lecture and laboratory work is all in the evening between the hours of 7 and 10, six days of the week and forty weeks of the year. The clinical work, hospital, dispensary, in-practice and out-practice, are between the hours of 10 a. m. and 10 p. m. Attendance on 100 clinical hours yearly before 7 in the evening is obligatory beside attendance by the seniors on night obstetric cases and Saturday evening clinic at Cook County Hospital. The faculty is composed of 42 professors, 21 instructors and assistants, total, 63. The course covers four years of ten months each. The total fees are, each year, $200. The Dean is Dr. Frances Dickinson. Total registration for 1902-3 was 330;

graduates, 20. The thirteenth session begins September, 1903, and ends June, 1904.

Illinois Medical College.—This school, organized in 1894, has a faculty of 26 professors and 19 assistants, a total of 45. A college dispensary and Cook County Hospital are available for clinical study. The requirements of admission include a high school diploma or its equivalent. The college is a member of the Association of American Medical Colleges. Attendance for seven months during each of four years is necessary for graduation. Total fees are about $75 for each year. The Dean is Dr. B. B. Eads, 103 State St. Total registration for 1902-3 was 265; graduates, 47. The next fall term begins Oct. 1, 1903.

American Medical Missionary College.—This school was organized in 1895 and has the primal object of educating men and women as missionary physicians. The faculty numbers 25. The didactics and laboratory work, covering the first two years, are carried on at Battle Creek, Mich., and the clinical studies in Chicago. A hospital with 20 beds, in connection with the college, together with a free college dispensary, with an obstetric department, supply material for practical work. The college is a member of the Association of American Medical Colleges. The course covers four years of nine months each. Total fees are $125 for each of the four years. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1902-3 was 88; graduates, 22. The ninth session opens Sept. 23, 1903, and closes June 22, 1904.

College of Medicine and Surgery.—Physio-Medical. This school was organized in 1896 and has a faculty of 44 teachers. A college dispensary supplies material for clinical work. The course covers four years of seven months each. Fees for the first year, $100; for the second and third, $95 each, and $110 for the fourth. The Secretary is Dr. Florence Dressler, 245 Ashland Boul. Total registration for 1902-3 was 76; graduates, 12. The next session begins September, 1903, and ends April, 1904.

National Medical University.—This was organized in 1891, and its courses include instruction in the methods of all the so-called schools of practice, including osteopathy. The faculty numbers 76. The requirements for entrance are in accordance with the requirements of the Illinois State Board of Health. Each year is divided into four quarters of thirteen weeks each. The fees are $100 per year. The Registrar is Dr. L. D. Rogers, 533 Wells St. Total matriculants for 1902-3 were 173; graduates, 17. The autumn quarter will begin Sept. 30, 1903.

American College of Medicine and Surgery.—Eclectic. This school was founded in 1901 and has a faculty of 65. The requirements for entrance are in accord with the rules of the State Board of Health. The course is four years of eight months each. American and Cook County hospitals supply clinical material. The Secretary is Dr. J. D. Robertson, 103 State St. The annual fee is $100; matriculation fee is $5; a total fee for one year, with board, room, light and heat, is $208. The enrolment, 1902-3, was 126; graduates, 10. The next session begins Sept. 29, 1903, and closes May 14, 1904.

INDIANA.

Indiana, population 2,516,462, has five medical colleges. Four are situated in Indianapolis, a city of 169,164 people: The Central College of Physicians and Surgeons, Medical College of Indiana, the Eclectic Medical College and the Physio-Medical College of Indiana. The clinical facilities of Indianapolis are good, and board and lodging can be obtained from $3 a week and upward. The Fort Wayne College of Medicine is situated in Fort Wayne, a railroad and manufacturing town of 45,115 inhabitants. Board and room can be obtained there at an average of $3 a week.

Indianapolis.

Central College of Physicians and Surgeons.—This school was organized in 1879 and reorganized in 1901. The faculty numbers 23 professors and 45 lecturers and demonstrators, total 68. A new college building has been erected on the most up-to-date plans. Its floor space comprises 25,000 square feet, more than half of which is devoted to laboratory teaching. The school gives instruction largely by laboratory and clinical methods. Clinical facilities are furnished by a dispensary maintained by the college, by the City Dispensary, City Hospital, St. Vincent's Infirmary and the Central Hospital for the Insane. Bedside clinics are given to sections of senior class daily at City Hospital. This college was a charter member of the Association of American Medical Colleges. The course is four years of 7 months each. The Secretary is Dr. John F. Barnhill. The fees are $75 for each year. Total registration, 1902-3, was 115; graduates, 22. The session for 1903-4 will open Sept. 22, 1903.

Medical College of Indiana.—This is the Medical Department of the University of Indianapolis and was organized in 1869. The faculty embraces 26 professors, 42 adjuncts, lecturers, etc., a total of 68. The City Hospital, containing 200 beds; Indianapolis Dispensary: Central Hospital for the Insane, with a capacity for 1800 patients; St. Vincent's and the Maternity hospitals, and a college dispensary provide clinical facilities; the wards in the charity hospitals are open to students of this college for bedside instruction. The laboratory and lecture-room space is ample. This college is a member of the Association of American Medical Colleges. The course extends over four years of seven months each. Fees: First and second years, $80 each; third, $75, and $100 for the fourth year, which includes graduation fee. The Dean is Dr. Henry Jameson, Newton-Claypool Bldg. Total enrolment for 1902-3 was 332; graduates, 76. The thirty-fourth session opens September, 1903, and closes April, 1904.

Eclectic Medical College of Indiana.—This school was organized in 1900 and has a teaching force of 31. The course is four years of six months each. Fees: For each year, $75, or for all four, $225; $25 for graduation. Total registration, 1902-3, 28; graduates, 5. The Dean is Dr. R. T. Laycock, 909 Bates St. The next session begins Sept. 22, 1903, and ends April 10, 1904.

Physio-Medical College of Indiana.—This school was organized in 1873, and has a faculty of 30. The course is four years of 26 weeks each. Total fees for each year are $70. The Secretary is Dr. C. T. Bedford. Total enrolment, 1902-3, was 29; graduates, 9. The next session begins Oct. 7, 1903, and closes May, 1904.

Fort Wayne.

Fort Wayne College of Medicine.—This school was organized in 1879, has a faculty of 25 professors and 9 lecturers and assistants, a total of 34. St. Joseph's Hospital, with a capacity of 250 patients; Hope Hospital, with 200 beds; St. Roche's Hospital, having accommodation for 35 patients; Indiana School for Feeble-Minded Youth and Allen County Orphan Asylum, capable of holding 150 children, supply the clinical facilities. This school is a member of the Association of American Medical Colleges. The curriculum covers four years of seven months each. The course is practical, supplemented by lectures and laboratory work. The total fees for each year are $75, with an additional $5 matriculation fee, payable once. The Dean is Dr. C. B. Stemen, 715 Broadway. Total registration, 1902-3, was 46; graduates, 5. The next session opens Sept. 8, 1903, and closes April 22, 1904.

IOWA.

Iowa, population 2,231,853, contains five medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City (population 7,987). In Des Moines (population 62,139) is the Iowa College of Physicians and Surgeons. In Sioux City (population 33,111) is the Sioux City College of Medicine. In Keokuk (population 15,641) is Keokuk Medical College, College of Physicians and Surgeons. Board and lodging may be had in Des Moines for $15 a month and upward and in the other cities named for from $2.50 to $5 per week.

Iowa City.

College of Medicine of the State University of Iowa.—This department was organized in 1870. The faculty is made up of 13 professors, 26 lecturers, demonstrators and assistants, a total of 39. The University Hospital, built in 1897 at a cost of $50,000, supplies the clinical material. The school is a member of the Association of American Medical Colleges. The course of study covers four years of thirty-six weeks each, embracing graded laboratory, didactic and clinical work. Combined courses leading to more than one degree are offered. Total fees for each year are $65. The Dean is Dr. James R. Guthrie, Dubuque. Total number of students registered for 1902-3 was 251; graduates, 35. The thirty-fourth session opens Sept. 24, 1903, and ends June 15, 1904.

College of Homeopathic Medicine of the State University of Iowa.—This was organized in 1877. The faculty is composed of 10 professors and 10 lecturers and assistants, a total of 20, but some of these are of the faculty of the College of Medicine. The requirements for admission, and the work, with the exception of that pertaining to homeopathy, are the same as those for the other department. The fees are also the same. The Dean is Dr. George Royal, Des Moines. Total registration for 1902-3 was 35; graduates, 11. The twenty-seventh session begins in September, 1903, and will end in June, 1904.

Des Moines.

The Iowa College of Physicians and Surgeons.—This, the Medical Department of Drake University, was organized in 1882. The faculty contains 16 professors and 16 assistants, a total of 32. Mercy and Methodist hospitals furnish clinical material and attendance on clinics is required the same as on lectures. The requirements for admission are those determined by the Association of American Medical Colleges, of which association this college is a member, and by the Iowa State Board of Medical Examiners. Instruction is given by means of lectures, recitations, demonstrations, laboratory work and hospital clinics. The work covers a graded course of four years of nine months each. The total fees for the first two years are $80 each, and for the last two years, $75 each. The Dean is Dr. D. S. Fairchild. The total registration for 1902-3 was 66; graduates, 11. The twenty-second session begins Sept. 14, 1903, and ends June 16, 1904.

Sioux City.

Sioux City College of Medicine.—This school was organized in 1891. The faculty numbers 15. Clinical material is supplied by St. Joseph's, Mercy and Samaritan Hospitals and a college dispensary. This college is a member of the Association of American Medical Colleges. The system of study embraces a four-year graded course, eight months being a school year. Final examinations are held at the close of each course of instruction. Matriculation fee, paid but once, $5; tuition, each year, $48; hospital fee, $5, and graduating fee, $20. The Secretary is Dr. J. N. Warren. Total number of students registered, 1902-3, was 72; graduates, 13. The fourteenth session opens Sept. 8, 1903, and will close May 4, 1904.

Keokuk.

Keokuk Medical College, College of Physicians and Surgeons.—In 1849 the College of Physicians and Surgeons, Keokuk, was organized and four years later it became the Medical Department of the University of Iowa, continuing as such until 1870, when the original name was resumed. By the union, in 1899, of this college with the Keokuk Medical College, organized in 1890, the present school under the above name was founded. The clinical material is good. St. Joseph's Hospital is open to the student for study and the clinics held there are large and varied. The faculty is composed of 17 professors and 5 assistants and demonstrators, 22 in all. This college is a member of the Association of American Medical Colleges. The studies embrace a graded course of four years of seven months each. The total fees for the first year are $63; for the second and third, $58 each, and $53 for the last year. The Secretary is Dr. C. E. Ruth. Total registration for 1902-3 was 243; graduates, 56. The next session begins Sept. 15, 1903, and ends April 19, 1904.

KANSAS.

Kansas, population 1,470,495, has three medical colleges: Kansas Medical College is in Topeka (population 33,608), and the College of Physicians and Surgeons in Kansas City (population 55,000). In addition, there is a school which does not grant degrees, but prepares students in the first two years. This is the Medical School of the University of Kansas, at Lawrence, a town of 10,862 people. Board and lodging in all these places may be had for $3 to $5 per week.

Lawrence.

SCHOOL OF MEDICINE OF THE UNIVERSITY OF KANSAS.—This school does not confer the degree of Doctor of Medicine. It was organized in 1880. The faculty numbers 18. This school is a member of the Association of American Medical Colleges. Only the purely scientific subjects are taught, but the work in these is thorough, seventy-two weeks being devoted to the two-year course. The greater part of the work is in the laboratory, with recitations and assigned readings, the lectures being supplementary only. For this reason the equipment and arrangement of the laboratories have been given special attention. A combined course of four years is offered, conferring "the degree of bachelor of arts in medicine." The total fees to residents of the state are: First year, $35; second, $30; to non-residents of the state, $60 and $50. The Acting Dean is Dr. C. E. McClung. The number of students registered for 1902-3 was 31. The next session begins September, 1903, and will end June, 1904.

Topeka.

KANSAS MEDICAL COLLEGE.—This college, organized in 1890, has a faculty of 25 professors and 8 lecturers and assistants, 33 in all. Good material for both medical and surgical clinics is found in Christ's Hospital, with 100 beds, and Topeka State Hospital; the dispensary in the college building also supplies material for class demonstration. The college is a member of the Association of American Medical Colleges. The college building affords ample laboratory and lecture-room space. The course of study is a graded one covering four years of 30 weeks each. Individual instruction is especially aimed at. The total fees for the first three years are $70 each, and $30 for the last year. The Dean is Dr. John E. Minney. The total registration for 1902-3 was 101; graduates, 12. The fourteenth session begins Sept. 16, 1903, and will close April 14, 1904.

Kansas City (Kansas).

COLLEGE OF PHYSICIANS AND SURGEONS.—This was organized in 1894 as the Medical Department of Kansas City University. The faculty is made up of 29 professors, 13 lecturers and assistants, a total of 42. Bethany Hospital, with 60 beds; St. Margaret's Hospital, a college dispensary and an outside obstetric department supply clinical material. Practical demonstration and bedside teaching is emphasized in the work. The requirements for admission are in accordance with the rules of the Association of American Medical Colleges. The course of study is a graded one of four years, seven months each. A scholarship is offered for $175, but taken separately the total fees for the first three years are $60 each, and for the fourth year, $50; matriculation fee, $5, payable once. The Dean is Dr. J. W. May. The total registration of students for 1902-3 was 52; graduates, 10. The tenth session opens September, 1903, and will close March, 1904.

KENTUCKY.

Kentucky, population 2,147,174, has seven medical colleges. They are all situated in Louisville, a city of about 225,000 inhabitants, and are as follows: University of Louisville Medical Department, Kentucky School of Medicine, Louisville Medical College, Hospital College of Medicine, Southwestern Homeopathic Medical College, Kentucky University Medical Department, and Louisville National Medical College. Board and lodging in Louisville cost from $3 to $4 per week.

Louisville.

UNIVERSITY OF LOUISVILLE MEDICAL DEPARTMENT.—This school was organized in 1837, under the name, Louisville Medical Institute, and in 1846 assumed its present title. It has a faculty of 11 professors, 26 lecturers, demonstrators, etc., a total of 37. The University Hospital, City Hospital, Sts. Mary and Elizabeth Hospital, together with the college dispensary, furnish good clinical material. This school is a member of the Association of American Medical Colleges. The course covers graded work for four years of six months each. There are two six months' courses in the year; one course runs from Sept. 21, 1903, to April 1, 1904; the other runs from Jan. 1, 1904, to July 1, 1904. Total fees: First year, $107; second, $122; third, $100, and fourth, $112. The Dean is Dr. J. M. Bodine. Total registration for 1902-3 was 227; graduates, 34. The sixty-seventh session begins Sept. 21, 1903.

KENTUCKY SCHOOL OF MEDICINE.—This school was organized in 1850, and has a faculty composed of 20 professors, 19 lecturers, instructors and assistants, a total of 39. The College Hospital, City Hospital and the college dispensary furnish the facilities for clinical study. The student is brought directly into contact with the patient through dispensary and bedside work by dividing the classes into sections. This college is a member of the Association of American Medical Colleges. The laboratories and their equipment are good. The curriculum embraces a four years' course of 28 weeks each. The fees for the first two years are $120 each; for the third year, $100, and $90 for the fourth year. The Dean is Dr. W. H. Wathen, 628½ Fourth Ave. Total number of students registered for 1902-3 was 290; graduates, 56. The next session begins Jan. 1, 1904, and will end July 15, 1904.

LOUISVILLE MEDICAL COLLEGE.—This school was organized in 1869 and has a faculty of 11 professors and 11 instructors and assistants, 22 in all. The City Hospital, College Infirmary and a dispensary offer good clinical facilities. Applicants for admission must show by diploma, certificate or examination that they are sufficiently proficient in English, arithmetic, algebra, physics and such Latin as would be acquired in one year's study. The laboratories and lecture rooms are ample. The course of study covers four years of six months each. The fees for the first three years are $100 each; for the fourth, $90. The Secretary is Dr. Irvin Abell. Total registration for 1902-3 was 257; graduates, 53. The next session opens Sept. 21, 1903, and closes March 31, 1904.

HOSPITAL COLLEGE OF MEDICINE.—This school is the medical department of Central University of Kentucky and was organized in 1873. The faculty is composed of 9 professors and 35 assistants, lecturers, etc., a total of 44. The Gray Street Infirmary, City Hospital and a well-equipped college dispensary present good facilities for clinical study. This college is a member of the Association of American Medical Colleges. Laboratory work, which is a prominent feature of the course, is thorough and practical. The laboratories and amphitheaters are ample in equipment and capacity, and the hospital advantages give opportunity for personal bedside instruction. The course covers four years of six months each. Total fees for each of first two years, $120; for the third year, $85, and $125 for the fourth year. The Dean is Dr. P. Richard Taylor. Total enrolment for 1902-3 was 421; graduates, 69. The thirtieth session opens Jan. 1, 1904, and closes July 1, 1904.

KENTUCKY UNIVERSITY MEDICAL DEPARTMENT.—This school was organized in 1898. The faculty is [illegible] fessors, 19 lecturers, demonstrators, etc., 33 in [illegible] mary, the City Hospital and a college dispens[illegible] material. The school [illegible] e Association of American Medical Colleges. [illegible] ample facilities for clinical, laboratory and [illegible]. The course of study embraces graded work for four years of at least twenty-six weeks each. The calendar year is divided into four quarters of thirteen weeks each. Two quarters constitute a college year. Fees are $25 per quarter. The Dean is Dr. Thomas C. Evans, 419 W. Chestnut St. Total number of students registered in 1902-3 was 330; graduates, 57. The next session opens Oct. 1. 1903.

SOUTHWESTERN HOMEOPATHIC MEDICAL COLLEGE.—This college was organized in 1892 and has a faculty of 18 professors and 12 lecturers and assistants, 30 in all. A college dispensary supplies clinical material. The curriculum covers four years of seven months each. Total fees: First and second years, $80; third, $70, and $65 for the fourth. The Dean is Dr. A. L. Monroe. Total number of students for 1902-3 was 22; graduates, 5. Next session opens Sept. 29, 1903, and closes April 26, 1904.

LOUISVILLE NATIONAL MEDICAL COLLEGE.—Colored. This was chartered in 1888 and shows a teaching force of 19. There is a four-year course, seven months to the year; the fees are $58, $58, $55 and $50 for the four years respectively. The Dean is Dr. W. A. Burney. The attendance, 1902-3, was 26; graduates, 4. The next session opens Oct. 6, 1903, and ends about May 10, 1904.

LOUISIANA.

Louisiana, having a population of 1,381,625, contains two medical colleges: Medical Department of the Tulane University of Louisiana and New Orleans University. They are both situated in New Orleans, a city of 287,104 people. The cost of room and board is from $16 to $22 a month.

New Orleans.

MEDICAL DEPARTMENT OF THE TULANE UNIVERSITY OF LOUISIANA.—This school was organized in 1834 as the Medical College of Louisiana, and became, by law, in 1847, the Medical Department of the University of Louisiana, and in 1884 the Medical Department of the Tulane University of Louisiana. The faculty and all other instructors number 41. By acts of legislature the Charity Hospital, with its 900 beds, has been opened to the students of this school for clinical study, not only in medicine and surgery, but also in obstetrics and gynecology. In the year 1902 there were 8,793 cases treated in the wards of this hospital; these were indoor patients, and, in addition, 21,129 outdoor patients were treated in the free dispensary department. The Milliken Memorial Hospital, with a capacity for 200 children, is also available for study of clinical cases. Bedside instruction is given by the attending physicians to these hospitals, and postmortem examinations are held before the students. This college is a member of the Southern Medical College Association. The laboratories are large and well equipped, and the lecture rooms and recitation rooms are ample. The course of study covers four years of twenty-eight weeks each. Total fees for the first two years are $135 each, and for the third and fourth, $145 and $165 respectively. The Dean is Dr. Stanford E. Chaille, New Orleans. The total number of medical students registered for 1902-3 was 405; graduates, 82. The seventieth session begins Oct. 22, 1903, and will close May 4, 1904.

FLINT MEDICAL COLLEGE OF NEW ORLEANS UNIVERSITY.—Colored. This school was organized in 1889. The faculty is made up of 9 professors, 4 lecturers and instructors, 13 in all. Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic. This college is a member of the Association of American Medical Colleges. The curriculum covers a graded course of four years, thirty weeks each. The laboratories and lecture rooms are ample. Examinations are held monthly. Total fees for the first, second and third year are $40 each, and $50 for the last year. The Dean is Dr. H. J. Clements, New Orleans. Total enrolment for 1902-3 was 42; graduates, 5. The fifteenth college year begins Sept. 1, 1903, and will end March 18, 1904.

MAINE.

Maine, population 694,466, has one medical college, located in Portland, population 50,000. Board and lodging cost from $3 to $5 a week.

Portland.

MEDICAL SCHOOL OF MAINE.—This, the Medical Department of Bowdoin College, was organized in 1820. It has 13 professors and 5 instructors, total 18. Students of the first and second years are instructed in Brunswick, a town with 6,800 inhabitants. The third and fourth year classes are taught in Portland, where are situated the Maine General Hospital and other clinical advantages. Applicants for admission, unless they possess a diploma, are examined in English, arithmetic, algebra, geometry, United States history, physics, chemistry and Latin. The course covers four years of twenty-six weeks each. The total fees are $120 for the first year; for the second and third, $110, and $110 for the fourth year. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1903, 100; graduates, 20. The next session opens Dec. 23, 1903, and closes June 23, 1904.

MARYLAND.

Maryland, with a population of 1,188,044, contains eight medical colleges, all located in Baltimore, a city with 508,957 inhabitants. They are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Woman's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School and Maryland Medical College. The Bay View Hospital, having a capacity for 2,000 patients, is open to students for clinical instruction, and furnishes good opportunities for practical demonstrations. Board and lodging can be obtained for from $3 to $5 per week.

Baltimore.

School of Medicine of the University of Maryland.—This institution was organized in 1807 as the College of Medicine of Maryland, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland. The faculty is composed of 11 professors, 44 associates and lecturers, etc., a total of 55. The University Hospital, a part of which is used for a hospital for foreign seamen and another portion for a free city hospital, offers excellent clinical facilities. Besides this, the Presbyterian Eye, Ear and Throat Charity Hospital, in which 10,820 patients were treated in 1901; the Hospital for the Relief of Crippled and Deformed Children, containing 40 beds; the Maternity Hospital, and a college dispensary furnish material for clinical study. This school is a member of the Association of American Medical Colleges. The laboratories and lecture-rooms are ample and well equipped. The fourth-year class, divided into sections, receives special training in practical laboratory work in a well-appointed clinical laboratory. Didactic, laboratory and clinical instruction, special attention being paid to bedside work, make up the system of teaching. The course covers four years of seven and a half months each, and is graded. The total fees for the first two years are $120 each; for the third year, $110, and $140 for the final year. The Dean is Dr. R. Dorsey Coale, Baltimore. The total number of students registered in 1902-3 was 392; graduates, 96. The ninety-seventh session begins Oct. 1, 1903, and will terminate May 15, 1904.

College of Physicians and Surgeons, Baltimore.—This school was organized in 1872, and in [illegible] sity School of Medicine, established in 182 [illegible] h it. The faculty numbers 49. The clinic [illegible] se afforded in common with other schools, [illegible] lmore City Hospital; the Hospital for the [illegible] 100 beds; the Nursery and Child's Hospi [illegible] Maryland Lying-in Asylum, and a college [illegible] is a member of the Association of Amer [illegible] The work covers a graded course of four years, seven months constituting a year. Total fees are $115, $110, $110 and $130 for the respective years. The Dean is Dr. Thomas Opie. The total number of students registered in 1902-3 was 315; graduates, 76. The next session opens Oct. 1, 1903, and closes May 1, 1904.

Baltimore Medical College.—This college was organized in 1881, and has a faculty of 51. The clinical material is furnished by the Maryland General Hospital, having a capacity of 200 beds; the Maryland Lying-in Hospital, the Mount Hope Retreat, which presents good opportunity for the study of nervous and mental diseases, and a college dispensary, which, besides the great number of ambulatory patients treated, has an outdoor department that permits of the advanced student taking care of charity cases and carrying out his own [illegible] lege belongs to the Association of American [illegible] e college buildings afford ample laboratory, cli [illegible] space. Bedside teaching in the hospital wards is carried on in sections and every member of the senior class is required to attend throughout the session. The course of study is graded and covers four years of seven months each. The Dean is Dr. David Streett. The total number of students registered in 1902-3 was 410; graduates, 93. The twenty-third session opens September, 1903, and closes April, 1904.

Woman's Medical College.—This school was organized in 1882 and has a faculty of 18 professor [illegible] lecturers, a total of 27. The Hos [illegible] College and a college dispensary fu [illegible] while abundant special material is [illegible] Eye and Ear and the Sheppard a [illegible] mental cases). The college is a mem [illegible] ican Medical Colleges. The laboratories and lecture rooms are equipped with all necessary apparatus; the practical work is emphasized. Eight months constitute a school year, and the course covers graded work for four years. The total fees for the first three years are $106 each, and $81 for the last year, with $30 graduation fee. The Dean is Dr. R. H. Thomas, 1718 John St. Total number registered for 1902-3 was 16; graduates, 2. The twenty-second session opens Oct. 1, 1903, and closes May 27, 1904.

Baltimore University School of Medicine.—This school, organized in 1884, has a faculty of [illegible] lecturers, demonstrators, etc., in all 35. The [illegible] Hospital, Lying-in Hospital and the clinical [illegible] mon with the other schools, supply the facilities for practical work. This college is a member of the Association of American Medical Colleges. The course is four years of six months each. The fees are about $100 each year. The Dean is Dr. Hampson H. Biedler, 119 W. Saratoga St. Total registration for year 1902-3 was 58; graduates, 26. The twentieth session opens October, 1903, and closes April, 1904.

Johns Hopkins Medical School.—This is the Medical Department of Johns Hopkins University and was organized in 1893. The faculty comprises 29 professors, 45 lecturers and assistants, a total of 74. The Johns Hopkins Hospital and Dispensary furnishes abundant and varied clinical material; the lying-in department of the hospital, opened in 1896, is in successful operation. The requirements for admission demand that the applicant either has, (*a*) completed the chemical-biologic course which leads to the A.B. degree in the university; (*b*) graduated at an approved college or scientific school, and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and such knowledge of physics, chemistry and biology as above indicated. If the candidate is unable to show this, he must pass a satisfactory examination covering the ground. The school is a member of the Association of American Medical Colleges. The laboratories are large, well lighted and well equipped. The buildings are ample and built expressly for the purpose for which they are used. In the method of instruction special emphasis is laid on practical work in the laboratories, dispensary and in the wards of the hospital. The first two years are devoted to practical work in the laboratories, combined with demonstrations, recitations and lectures, and during the remainder of the course opportunity for the personal study of cases is given. The work covers a graded course of four years, eight and a half months to the year. Final examinations, partly written and partly oral, include practical tests in laboratory and clinical work; the general character of the student's work is closely watched. The charge for tuition is $200 per annum, with no fees unless a microscope is rented; that fee is $5 a year. The Dean is Dr. William H. Howell, 232 W. Lanvale St. Total registration in 1902-3 was 257; graduates, 49. The eleventh session begins Oct. 6, 1903, and ends June 15, 1904.

Maryland Medical College.—This school was organized in 1898, and has a faculty of 14 professors, 19 associates, lecturers, etc., 33 in all. The Franklin Square Hospital and a college dispensary furnish clinical material. The course of study covers four years of eight months each. A matriculation fee of $5 and total laboratory fees for the three years of $50 are charged; tuition is $75 each year. The Dean is Dr. J. Wm. Funck, 1631 Eutaw Pl. Total registration for 1902-3 was 204; graduates, 59. The sixth session begins Sept. 15, 1903, and closes in May, 1904.

Southern Homeopathic Medical College.—This school was organized in 1890, and has a faculty of 11 professors, 21 associates and lecturers, a total of 32. The clinical facilities are those offered by the Maryland Homeopathic Hospital, which has 55 beds, and the dispensary; the obstetric department also furnishes clinical material. Applicants for matriculation must pass a satisfactory examination in English, arithmetic, geography, history, and Latin, unless they possess satisfactory evidence that they have done a corrresponding amount of work. The course covers graded work for four years, seven months to the year. The fees are $105 for the first year, $100 each for the second and third, and $130 for the last year; $350 in advance for the full four years' course. The Dean is Dr. George T. Shower, 421 Roland Ave. Total registration for 1902-3 was 26; graduates, 3. The thirtieth session begins Oct. 5, 1903, and ends May 4, 1904.

MASSACHUSETTS.

Massachusetts, population 2,805,346, has four medical colleges: Medical School of Harvard University, Boston University School of Medicine, College of Physicians and Surgeons, and Tuft's College Medical School. They are all situated in Boston, a city of 603,163 inhabitants. Board and lodging can be obtained for from $5 to $7 per week.

Boston.

Medical School of Harvard University.—This was organized in 1782, and has a faculty of 26 professors, 112 associates and assistants, etc., a total of 138, Beside the clinical advantages mentioned, the Boston Lying-in Hospital, the Boston Dispensary, where 43,918 patients were treated last year; the Infants' Hospital, the Children's Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital, all furnish excellent opportunity to the student for clinical study. Students are also permitted to visit the Free Hospital for Women and Carney Hospital on application to the physicians on duty. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by special vote of the faculty in each case." Each candidate is required to hand in the original note-book in which he recorded the work performed by him in qualitative analysis, and also to pass a written examination in theoretical and descriptive chemistry. If conditioned in chemistry one year is allowed in which to remove the condition. The laboratories and lecture rooms offer ample facilities and the equipment is good; special facilities are open to those desiring to pursue advanced or original work. The course of study covers four years of nine months each; the course is graded, and each correlated group as taken up presents sufficient variety to avoid monotony. A series of written, oral and practical examinations are distributed throughout the course of study. Fees: Matriculation, $5; $200 each year. The Dean is Dr. William L. Richardson, 688 Boylston St. The total registration for 1902-3 was 432; graduates, 114. The 122d session begins Oct. 1, 1903, and ends June 24, 1904.

College of Physicians and Surgeons.—This school was organized in 1880, and has a faculty of 24 professors, and 15 lecturers and assistants, a total of 39. Clinical facilities are furnished by the North End Hospital and Dispensary, Union General Hospital, and the city and state institutions. This school is a member of the Association of American Medical Colleges. The course of study covers graded work for four years of eight months each. The total fees for the first year are $100, and for each of the other years about $110, with a graduation fee of $30. The Registrar is Dr. John H. Jackson, 155 Franklin St., Fall River. Total students registered 1902-3, 117; graduates, 19. The twenty-fourth session begins Sept. 25, 1903, and ends June, 1904.

Tufts College Medical School.—This school was organized in 1893 as the Medical Department of Tufts College. It has a faculty of 28 professors, 46 assistants and lecturers, etc., a total of 74. Clinical material is furnished by the Boston City Hospital, Massachusetts Charitable Eye and Ear Infirmary, Free Home for Consumptives, Free Hospital for Women, Boston Dispensary, Cambridge Hospital, St. Elizabeth's Hospital, Carney Hospital and the college dispensary; *the student has also the advantages derived from an out-department in connection with the Boston Dispensary.* "Graduates of a high school, college or university, and students having certificates of entrance to a college or university, or holding the State of New *York Regents' certificate," also certain* approved preparatory school graduates, are admitted without examination; all others must pass an examination in English, Latin, physics [illegible] ling *arithmetic*, elementary algebra and plan [illegible] tories and lecture rooms are ample in their [illegible] Teaching is carried on by means of lectures, recitations and practical work in the laboratories and clinics; frequent *examinations are held during a course and a* final examination on completing the subject. Graded instruction covering four years of eight months each makes up the full course. *The total fees are $125 each year; dissecting material is* furnished at cost. The Dean is Dr. Harold Williams, 528 Beacon St. Total number of students for 1902-3 was 349; graduates, 35. The eleventh session begins October, 1903, and ends June 1904.

Boston University School of Medicine.—*Homeopathic. This* school was organized in 1873; in 1874 the New England Female Medical College, founded in 1848, was merged into it. The faculty includes 23 professors, 35 associates and assistants, etc., a total of 58. Clinical material is *furnished* by the Massachusetts Homeopathic Hospital, containing 225 beds, a dispensary, a maternity hospital, and the Westborough Insane Hospital; 800 patients. Candidates who have taken their degree in arts, philosophy or science are not examined; all others are examined in English, Latin, French or German or history, mathematics, physics and chemistry. The instruction is graded and covers a period of four years, eight months each. Total fees for the first year are $105; for the second and third, $125 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 295 Commonwealth Ave. *Total registration for 1902-3 was 127; graduates,* 36. The thirty-first session opens Oct. 8, 1903, and closes June 1, 1904.

MICHIGAN.

Michigan, population 2,420,982, has six medical colleges. Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 14,509 people. Board and lodging cost from $2.50 to $5 a week. Detroit, a city of 300,000 inhabitants, contains three medical colleges, as follows: Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery. Board and room *can be obtained for $3 a week and upward.* Grand Rapids Medical College is located in Grand Rapids, population 87,565. Room and board cost from $3 to $3.50 a week.

Ann Arbor.

University of Michigan, Department of Medicine and Surgery.—This was organized in 1850, and has a faculty composed of 17 *professors, 50 associates,* instructors, etc., a total of 67. The University Hospital, with nearly 200 beds, furnishes the clinical facilities. The requirements for admission provide that the applicant, either by certificate or *examination, show* a sufficient knowledge of the following: English grammar, rhetoric and composition; United States and general history; algebra, through quadratics, plane and solid geometry *and plane trigonometry;* physics, *biology* and *chemistry,* these subjects to be accompanied by laboratory work; German or French and Latin. The laboratories and their equipment are good, and the *training in them and* in didactic *work is thorough.* The new medical building accommodating the laboratories of hygiene, bacteriology, physiologic chemistry, pathology, histology, embryology and anatomy is now completed and *occupied. This school is a member of the* Association of American Medical Colleges. The curriculum embraces four years of nine months each. A combined course leading to degrees in both arts and medicine in six years is offered. The *total fees* for Michigan students for the entire course of four years is about $300, and for others $350. The Dean is Dr. Victor C. Vaughan. Total registration for 1902-3 was 455; graduates, 92. *Next session begins Sept.* 29, 1903, and will end June 23, 1904.

Homeopathic College, University of Michigan.—This department of the University was organized in 1875 and has a faculty of 18 professors and 12 assistants, total 20; *a part of the teaching* force is from the other departments of the University. The Homeopathic Hospital, containing 140 beds, furnishes material for clinical teaching, The course covers four years *of nine months* each. The total fees *for Michigan* students are about $240 for the four years, and for other students about $295. The Dean is Dr. W. B. Hinsdale. Total enrolment for 1902-3 was 76; *graduates,* 13.

Detroit.

Detroit College of Medicine.—This school was formed in 1885 by the union of Detroit Medical College, organized in 1868, and the Michigan College of *Medicine,* established 1880. The faculty embraces 21 professors, 50 lecturers, instructors, etc., a total of 71. Clinical facilities are offered by the following *hospitals:* St. Mary's and Harper, each of which contain a free disepnsary; Woman's, St. Luke's, the Children's Free Hospital and the House of Providence. This school is a member of the *Association of* American Medical Colleges. The course covers four years of seven months *each.* The work includes laboratory, didactic and clinical study. Fees: Matriculation, paid once, $5; tuition, each *term,* $65; hospital and laboratory tickets, each $10, and diploma fee $30. The Secretary is Dr. H. O. Walker. Total enrolment for 1902-3 was 257; graduates, 62. The next session begins Sept. 23, 1903, *and* will close May 5, 1904.

Michigan College of Medicine and Surgery—Saginaw Valley Medical College.—These two schools, organized in 1888 and 1896 respectively, have just been *consolidated* to continue on the site of the former. The faculties numbered 36 and 30 and are combined. Clinical facilities are *offered* by a college dispensary, the Emergency Hospital and Detroit Eye and Ear Infirmary. This school is a member of the Association of American Medical Colleges. The course covers graded work for four years of seven *months each.* The fees are about $80 to $95 per year; third year $70 and $95 for the fourth *year. The Dean is* Dr. Hal. C. Wyman, 46 W. Adams Ave., Detroit. In the *perfecting of* the consolidation some of these details may be changed. Total registration for 1902-3 of the Michigan College of Medicine and Surgery was 66; graduates, 19; of the Saginaw Valley Medical College, 85; graduates, 34. The next session begins Sept. 29, 1903, and will end May 1, 1904.

Detroit Homeopathic College.—This *was* organized in 1899, and has a faculty of 35. Grace Hospital and *a college dispensary* are available for study of clinical cases. Unless possessing certificates of an equal amount of work completed, applicants for admission will be examined in English, arithmetic, history, *geography* and elementary Latin. The course embraces work for four years of seven months each. Fees: From $70 to $90 per year. The Dean is Dr. D. A. MacLachlan. Total enrolment for 1902-3 was 52; graduates, 14. The next session begins September, 1903, and will close *April,* 1904.

Grand Rapids.

Grand Rapids Medical College.—This was organized in 1897. The faculty is made up of 28 professors and 3 assistants, in all 31. Clinical cases in the U. B. A., St. Mary's, and Woman's Butterworth hospitals, and St. John's Orphan Asylum and a college dispensary are *available for study. The course* is four years *of* six months each. The total fees are about $65 for each year. The Dean is Dr. C. H. White. Total enrolment for 1902-3 was 52; *graduates,* 16. *Next session opens* Oct. 1, 1903, and closes June 1, 1904.

MINNESOTA.

Minnesota, population 1,751,394, *contains three medical colleges:* Hamline University College of Medicine, and the two *medical departments of the University of Minnesota, viz.,* the *College of Medicine and Surgery and the College of Homeopathic Medicine and Surgery.* They are all situated in Minneapolis, *a city with a population of 225,000.* The various hospitals of Minneapolis furnish ample clinical material, and owing to the proximity to St. Paul, the clinical advantages of that city are Medicine and Surgery. They are all situated in Minneapolis, available. The average cost of board and lodging is $20 a month.

Minneapolis.

College of Medicine and Surgery.—This department of the University of Minnesota was created in 1883, but at that time *its only function was to* examine for the degrees of B.M. or M.D. In 1888, by the consolidation and absorption of the Minnesota Hospital Medical College and the St. Paul Medical College, its *present status was assumed.* The faculty is composed of 31 professors and 53 instructors and assistants, a total of 84. The medical school occupies five buildings, and its laboratories are *excellent. The last legislature made an* [illegible] of $105 000 for an additional laboratory of pathology [illegible] large hospitals in the Twin Cities, beside [illegible] and St. Paul *dispensary, afford an abundant supply of material* for clinical study. The curriculum covers four years of nine months each, and the work is carefully graded. The entrance requirement of one year of *university, in addition to four years of* high school work, limits the number of students, but assures a high standard of the student body. Total number of students registered in 1902-3 was 315; graduates, 70. Total fees for each *year, $100.* The Dean is Dr. Parks Ritchie. The next session opens Sept. 1, 1903, and closes June 2, 1904.

College of Homeopathic Medicine and Surgery.—This is a department *of the University* of Minnesota and was *organized* in 1888. The faculty comprises 19 professors and 14 assistants, 33 in all. The primary branches are taught by the professors of the College of Medicine and Surgery. *The course is graded,* extending *over four years* of nine months each. The total fees for the first two years are $100 each, and $80 each for the *last two* years. The Dean *is Dr. Eugene L. Mann. Total* number of students *registered in* 1902-3 was 18; graduates, 6. The next session opens Sept. 1, 1903, and closes June 2, 1904.

Hamline University College of Medicine.—This was organized in 1883. Its faculty is composed of 23 professors, 17 instructors and assistants, a total of 40. The laboratories and lecture rooms are large, well lighted and supplied with all the necessary equipment. *Clinical* work is offered to *the student* in City *Hospital,* Asbury Methodist Hospital, Swedish, St. Barnabas' and St. Mary's hospitals in Minneapolis, Bethesda *Hospital,* City and *County,* and St. Joseph's, in *St.* Paul, and the *college dispensary.* This school belongs to the Association of American Medical Colleges. The course of study covers *graded* work for four years, nine months making a year. Total fees, first year, $85; second year, $87.50, and for each of the last two, $80 The Dean is Dr. George C. Barton. Total number of students 1902-3 was 123; graduates, 34. *The next session* begins Sept. 15, *1903, and ends* June 8, 1904.

MISSOURI.

Missouri, population 3,106,665, *has fifteen medical* colleges. St. Louis, population 575,238, contains six of these, viz.: St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Marion-Sims-Beaumont College of Medicine, Washington University

Medical Department, and Barnes Medical College Board and lodging can be procured for from $3 50 to $5 a week. Kansas City, with 163,752 inhabitants, has six colleges, namely: Kansas City Medical College, University Medical College, the Hahnemann Medical College of Kansas City, Woman's Medical College, Medico Chirurgical College and Eclectic Medical University Room and board can be obtained in this city for from $3 to $5 a week Ensworth Medical College and Central Medical College are located in St Joseph, population 105,000; board and room can be had for from $3 50 to $5 a week. Department of Medicine of the University of Missouri is at Columbia, a town of 5651. Board and lodging can be obtained at Columbia for from $2 to $5 a week.

St. Louis.

St Louis College of Physicians and Surgeons—This school was organized in 1878 and has a faculty of 23 professors 26 lecturers, instructors etc, a total of 49 The resources for clinical instruction are Jefferson Hospital, which is open to students of this college only, City Hospital, with 600 beds, Female Hospital having 250 beds, City Insane Asylum City Poorhouse and the college dispensary This college is a member of the Association of American Medical Colleges The laboratory and lecture room space and the equipment are ample The course of study covers four years of seven months each and is graded Total *fees for the first year are* $70 second $65, third, $60, and $75 for the fourth year The Dean is Dr Waldo Briggs, 2600 Gamble St Total number of students registered 1902-3, was 270, graduates 62 The twenty fifth session begins Sept 16, 1903, and ends April 9, 1904

Marion Sims Beaumont Medical College—By the union of Marion Sims, organized in 1890, and Beaumont Hospital Medical College organized in 1886 the present school was founded It is the Medical Department of St. Louis University. The faculty is composed of 40 professors, 55 lecturers and assistants a total of 95 Clinical facilities are offered by Alexian Brothers Hospital, with 250 *beds*, *Rebekah Hospital, having a capacity* for 50 patients: Josephine Hospital 50 beds, Mt St Rose Throat and Chest Hospital 150 beds Good Samaritan Hospital, 50 beds St Mary's Infirmary, containing 150 beds, the City Hospital and Insane Asylum, each with a capacity of 600 patients Grand Avenue Dispensary also furnishes good material for practical instruction This school is a member of the Association of American Medical Colleges. The buildings afford ample laboratory and lecture-room space and they are well equipped The course of study embraces laboratory and clinical instruction, with recitations and lectures The curriculum covers four years of seven months each The total fees for the first year are $80, for the second and third $75 each, and $100 for the fourth The Secretary is Dr H W Loeb 3559 Olive St Total number of students registered for 1902-3 was 391 graduates, 88 The next session opens Oct 1, 1903 and closes May 1 1904

Washington University Medical Department—This school was organized in 1891 from the St. Louis Medical College which was founded in 1842 In 1899 the Missouri Medical College, organized in 1840 was added The faculty comprises 39 professors 22 lecturers and instructors, a total of 61 Clinical material is furnished by the St Louis Mullanphy Hospital Polyclinic Hospital Bethesda Hospital and O'Fallon's Dispensary In addition to these the City Hospital Female Hospital Insane Asylum and Poorhouse are used in common with the other schools The requirements for admission are higher than those of the Association of American Medical Colleges The college buildings of which there are two, furnish the best laboratory and lecture room facilities The course is four years of seven and one half months each and the system of study embraces laboratory, didactic and clinical teaching The total fees for the first year are $121 second $105 and for the third and fourth years $100 each The Dean is Dr Robert Luedeking Total registration of students for 1902-3 was 281, graduates 53 The next session opens Sept 24, 1903, and closes May 19, 1904

Barnes Medical College—This school was organized in 1892 and has a faculty of 24 professors and 20 lecturers and assistants a total of 44 The clinical advantages are those offered by Centenary Hospital, with 150 beds City Hospital, the college dispensary and the outdoor obstetrical department This college is a member of the Association of American Medical Colleges The laboratories are well equipped and other facilities ample The course of study includes graded work for four years of seven months each The total fees for the first three years are $75 each and $85 for the fourth year The Secretary is Dr. Pinckney French Century Bldg Total registration for 1902-3 was 495 graduates 100 The twelfth session opens Sept 7, 1903, and closes April 21, 1904

American Medical College—Eclectic This was organized in 1873 and has a faculty of 9 professors and 5 lecturers etc, a total of 14 Metropolitan Hospital, containing 40 beds St Louis City Hospital and a college dispensary supply ample clinical material The requirements for admission are those of the National Federation of Eclectic Medical Colleges of which this college is a member The course of study covers four years of seven months each The total fees are Tuition $75 per year dissecting material $5 per year for three years final examination and graduation fee $25 Total registration for 1902-3 was 78 graduates 18 The Dean is Dr M M Hamlin, 2900 Lawton Ave The next session opens Sept. 21, 1903, and closes April 13, 1904

Homeopathic Medical College of Missouri—This was organized in 1857, and has a faculty of 26 professors and 5 assistants total 31 Clinical facilities are offered by the City Hospital, Children's Free Hospital and a college dispensary The curriculum covers four years of seven months each Fees: First year, $80, second, $75 third, $60, and $85 for the fourth year The Dean is Dr L C McElwee Total registration for 1902-3 was 66, graduates 13 The next session opens September, 1903, and closes April, 1904

Kansas City.

Kansas City Medical College—This was established in 1869, and has a faculty of 19 professors, and 26 lecturers, demonstrators etc, in all 45 The clinical facilities are those of St. Joseph's Hospital, which also contains an out patient department; the City Hospital Bethany Hospital, Scarritt Hospital, St Anthony's *Home* for Children and the college dispensary. This college is a *member* of the Association of American Medical Colleges The building is large and well equipped the course is graded and the classes in practical work are divided into small sections and required to personally conduct series of obstetric, medical and surgical cases as a condition of graduation The curriculum embraces four years of seven months each The total fees for the first three years are $75 each, and $85 for the fourth The Secretary is Dr R M Schauffler, 302 Deardorff Bldg Total registration for 1902-3 was 122, graduates, 24 The thirty fifth session begins Sept 9, 1903, and ends April 13, 1904

University Medical College—This was organized in 1881 as the University of Kansas City Medical Department and in 1888 was reorganized under its present name Its faculty comprises 21 professors and 25 lecturers and assistants a total of 46 Clinical material is furnished by the University Hospital, owned by the college, with 200 beds; the City Hospital, German Hospital, Home for the Aged containing 147 beds; the Sisters' Hospital, Scarritt and St Margaret's hospitals, the Children's Home, St. Joseph's Orphan Asylum, and the college dispensary and obstetric department Instruction is given by means of lectures, recitations, demonstrations and laboratory work and clinics The school is a member of the Association of American Medical Colleges The college building which has been *recently enlarged, furnishes ample accommodations for laboratories and lecture rooms* The course of study covers four years of seven months each and the work is graded The total fees for each of the first two years are $80, for the third $60, and $85 for the fourth year The Dean is Dr Samuel C James Bryant Bldg The total number of students registered in 1902-3 was 222, graduates, 63. The twenty third session begins Sept 9, 1903, and ends April 27, 1904

Woman's Medical College—This school was organized in 1895, and has a faculty composed of 44 professors, 6 lecturers and assistants, a total of 50 Material for clinical study and demonstration is furnished by St Joseph's, Scarritt, German, Sisters', Agnew, St *Margaret's and City hospitals, and the college dispensary.* The requirements for admission are those of the Association of American Medical Colleges The course of study embraces graded work for four years of seven months each The total fees for the first year are $68, second, $60, third, $55, and $80 for the fourth year. The Dean is Dr Nannie P Lewis 1219 Wyandotte St Total number of matriculants for 1902-3 was 16, graduates, 1 The ninth session opens Sept 16, 1903, and closes March 24, 1904

Medico Chirurgical College—This school was organized in 1897 as the Kansas City College of Medicine and Surgery of Kansas City, Kan, and was reorganized the following year under its present name Its faculty embraces a total of 61 Clinical facilities are furnished by the hospitals of Kansas City, used in common by the medical colleges, and a college dispensary The course covers four years of six months each The fees are For the first year, $70; second, $65; third $55, and $75 for the fourth year The Dean is Dr George O Coffin, 400 New Ridge Bldg Total registration for 1902-3 was 83; graduates, 19 The next session opens September, 1903 and closes March, 1904

Kansas City Hahnemann Medical College—This school was formed by the union of the Kansas City Homeopathic Medical College, organized in 1888, and the Kansas City University College of Homeopathic Medicine and Surgery It has a faculty of 38 The City Hospital, Homeopathic Hospital, the Sanitarium, Scarritt, University, Women's and Children's German, Bethany and Children's hospitals are open to its students for clinical study The college dispensary and clinics also supply clinical material Applicants for admission must show by diploma, certificate or examination that they have a sufficient knowledge of English, arithmetic, geography United States history, and Latin equal to one year's work The course covers four years of seven months each The Dean is Dr S H Anderson 1214 Main St Total registration for 1902-3 was 71; graduates, 17 The sixteenth session begins September, 1903, and closes April, 1904

Eclectic Medical University—This was organized in 1898 and has 22 in its faculty The curriculum covers four years of six months each Fees about $70 each year, with a graduation fee of $15 The Dean is Dr Theodore Doyle Total students for 1902-3 was 61; graduates, 15 The next session begins Sept. 17, 1903, and ends March 25, 1904

Columbia.

Department *of* Medicine *of the* University of the State of Missouri—This department was organized at Columbia in 1872 The faculty includes 12 professors 20 assistants, lecturers, etc a total of 32 Clinical facilities are supplied by the Parker Memorial State Hospital and the Boone County Infirmary A new $40 000 building for the medical laboratories has just been completed and has excellent equipment Special emphasis is laid on thorough training in the scientific branches which constitute the foundation of medicine Four years' course nine months each carefully graded The university offers also a combined course of six years conferring degrees in both arts and medicine The entrance requirements *are a diploma from* a good high school, or the full equivalent There is no charge for tuition, the only expense being a library fee of $5 each year, and small laboratory fees The Dean is Dr A W McAlester Total registration of students for 1902-3 was 98, graduates, 12 The next session opens September, 1903, and closes June 1, 1904

St. Joseph.

Ensworth Medical College—This was organized in 1888, and has a faculty of 22 professors and 12 lecturers and assistants, 34 in all Ensworth Hospital with 250 beds, City Hospital, containing 40 beds, the *State Hospital No 2* which is open to the students once a week and a college dispensary furnish clinical material Applicants for admission must show by certificate or examination that they possess a sufficient knowledge of English arithmetic, algebra physics and Latin equal to one year's instruc tion. The building furnishes ample laboratory and lecture-room facilities. The curriculum covers a graded course of four years of seven months each. The fees are about $55 each for the first three years, and $75 for the fourth year. The Dean is Dr. Jacob Geiger. Total enrolment for 1902-3 was 110; graduates, 14. The next session opens Sept. 1, 1903, and closes March 31, 1904.

Central Medical College.—This school was organized in 1894, and has a *faculty of 16 professors* and 8 lecturers, in all 24. The Methodist and St. Joseph's hospitals, State Hospital No. 2, and the City and County hospitals are available for clinical study; a college dispensary also supplies clinical material. The requirements for *admission are the possession of a high school* diploma, or its equivalent, or an examination. The curriculum embraces four years of seven months each. Fees: First year, $55; second, $50; third $50, and $75 for the fourth year. The Secretary is Dr. C. A. Tygart. Total enrolment for 1902-3 was 80; graduates, 23. The next session begins Sept. 1, 1903, and will end April 1, 1904.

NEBRASKA.

Nebraska, population 1,066,300, has three medical colleges: The University of Nebraska College of Medicine and John A. Creighton Medical College in Omaha (population 102,555); and Lincoln Medical College, at Lincoln (population 40,169). Board and lodging can be obtained for from $3 to $5 a week.

Omaha.

University of Nebraska College of Medicine.—This was organized in 1880 as the Omaha Medical College. In 1902 an affiliation was entered into with the University of Nebraska, the name being changed to the College of Medicine of the University of Nebraska. As soon as practicable, the first two years will be given only at Lincoln, though at present these courses are given both at Lincoln and at Omaha. The last two years are given *only* at Omaha. The faculty is composed of 35 professors and 20 lecturers and assistants, *total* 55. The Douglas County, Immanuel, Wise Memorial, and Omaha Methodist hospitals, together with the college dispensary, furnish an abundance of material for clinical study and demonstration. The course consists of graded studies covering four years of eight months each. The method of instruction consists of didactic and clinical lectures, section clinics, demonstrations, recitations and laboratory work. The college building is well adapted to its purpose, the laboratories being well equipped and the lecture rooms commodious. The fees, including breakage deposits, are $90 for the first two years, and $95 and $90 for the last two years respectively. Total number of students enrolled in 1902-3, 138; graduates, 38. The college is a member of the [illegible] American Medical Colleges. The Secretary is Dr. [illegible] Bee Building. The twenty-third annual sess[illegible] 22, 1903, and end May 26, 1904.

John A. Creighton Medical College.—This school, organized in 1892, is the Medical Department of Creighton University, and has a faculty of 27 professors and 16 associates, lecturers and assistants, a total of 43. The clinical facilities are those of St. Joseph's Hospital, containing 300 beds and having a clinical amphitheater connected with it; St. Bernard's Hospital, with 256 beds; Douglas County Hospital, Presbyterian and Mercy hospitals, and the college dispensary; the material is abundant and varied. The school is a member of the Association of American Medical Colleges. The building, which was completed in 1898, contains excellent facilities for laboratory and lecture-room work, and the equipment is good. In the methods of instruction, including clinical, didactic and laboratory work, special emphasis is laid on practical work. The course of study *embraces four* years of seven and one-half months each. The total fees for the first two years are $80 each, and $85 for each of the *last* two years. The Dean is Dr. D. C. Bryant, McCague Bldg. Total number of students registered in 1902-3 was 142; *graduates*, 29. The eleventh session opens Sept. 22, 1903, and closes May 1, 1904.

Lincoln.

Lincoln Medical College.—Eclectic. This was organized in 1889 and has a faculty of 27. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges, of which this college is a member. *The course of study* covers four years of thirty-two weeks each. The total fees for the first year are $80; second, $75; third, $75, and $85 for the fourth year, or $255 for all four years together. The Secretary is Dr. M. B. Ketchum. Total number of students for 1902-3 was 86; graduates, 16. The next session begins Sept. 15, 1903, and ends April 20, 1904.

NEW HAMPSHIRE.

New Hampshire, population 411,588, contains one medical college, located in Hanover, population 1884.

Hanover.

Dartmouth Medical School.—This is the Medical Department of Dartmouth College, and was organized in 1797. Its faculty is made up of 17 professors and 6 *instructors*, 23 in all. The Mary Hitchcock Memorial Hospital, a cottage hospital of 36 beds, supplies the clinical material. Applicants for admission must possess an education at least equivalent to graduation from a registered high school. The *laboratories* afford good facilities for work. The course covers four years of thirty-two weeks each. Fees: $125 each year. The *Dean is* Dr. William T. Smith. The total number of students registered for 1902-3 was 65; graduates, 14. The work for the first and second years begins with that of the academic department, commencing Sept. 24, 1903, and closing April and June, 1904, respect'vely; for the advanced classes it begins July 14, 1903, and ends in February, 1904.

NEW YORK.

New York State, population 7,268,894, has ten medical colleges. Seven of these, College of Physicians and Surgeons, Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College and the University and Bellevue Hospital Medical College, are located in New York City, population 3,437,202. This city, with its hospitals and dispensaries, offers abundant clinical material. Board and lodging *can be obtained* for from $5 to $7 a week.

Albany Medical College is in Albany, a *city of* 100,000 people, where board and room can be had for from $4 to $5 a week.

The University of Buffalo Medical Department is situated in Buffalo, population 352,387; here board and lodging can be obtained for from $3.50 to $5 per week.

The College of Medicine, Syracuse University, is in Syracuse, a city with 108,374 inhabitants. Board and lodging can be procured for from $3.50 a week upward.

The laws of the state of New York require of the prospective student of medicine a preliminary education equivalent to that obtainable in a four years' course in any of the public high schools recognized by the regents as maintaining a satisfactory standard. On proof of at least this amount of education, a medical-student certificate will be issued by the state authorities. *The colleges, therefore, have a common* standard for the requirements of admission.

New York City.

College of Physicians and Surgeons.—This school was organized in 1807 and its *present relation, that of* Medical Department of Columbia University, was assumed in 1860. The faculty embraces 37 professors and 77 demonstrators, instructors, etc., a total of 114. The Vanderbilt Clinic, where 45,338 patients were treated during the year 1902, and which is equipped with *all modern appliances* for the study and treatment of disease, and Sloane Maternity Hospital, containing 116 beds, offer exclusive clinical advantages to students of this school. Beside these, Roosevelt Hospital, containing 238 beds; New York Hospital, with 150 beds; Bellevue, 900 beds; Presbyterian, 350 beds; St. Luke's, 225 beds; General Memorial, 100 beds, and New York Foundling hospitals, together with the Eye and Ear Institute, containing 40 beds; Willard Parker and Reception hospitals, 200 beds; Babies' Hospital, 50 beds; St. Mary's Free Hospital for Children, 120 beds, and the Hospital for Ruptured and Crippled, 250 beds, all offer free clinical teaching to matriculants of this school. The laboratories, lecture rooms and amphitheaters are ample in equipment and accommodation; special provisions are made to equip each student thoroughly in each of the laboratories and thus make the work individual. The work is graded, covering four years of eight months each. The total fees for the first year are $205; *for the second and third, $200, and $225 for the fourth year. Total registration* for 1902-3 was 795; graduates, 168. The next session begins Sept. 23, 1903, *and ends June 8, 1904.*

Long Island College Hospital.—This was organized in 1858 and has a faculty of 9 professors and 64 assistants, instructors, *etc., a total of 73.* Long Island College Hospital, *containing 300* beds and connected with a four-story maternity hospital; *Polhemus* Memorial Clinic, and Hoagland Laboratory, completely equipped with the most modern apparatus, are *all a part of the* college. Beside the clinical facilities furnished by these, members of the faculty attend at Kings County, St. *John's, Brooklyn*, Norwegian, Williamsburg, Methodist Episcopal and the Brooklyn Eye and Ear hospitals, *where the students* are offered opportunities for clinical study. Many of these also contain out-patient departments, *thus permitting advanced students to attend personally* to cases. Bedside instruction is also given in the wards. The course *covers four years of thirty weeks each. Fees:* First year, $195; second, $200; third, $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1902-3, was 290; graduates, 40. The forty-sixth session opens Oct. 1, 1903, and closes May 15, 1904. The summer session opens May 11, 1904, and closes Aug. 11, 1904.

Cornell University Medical College.—This department of Cornell University was established in 1898. The *faculty* is composed of 39 professors and 103 *instructors* and assistants, a total of 142. The City Hospital, having 1,000 beds; Bellevue Hospital, New York Hospital. Presbyterian, Willard Parker and Reception, with 200 beds; New York Skin and Cancer; *St. Francis* having a *capacity* of 230 beds; St. Vincent's, with 200 beds; the Manhattan Eye and Ear Infirmary, in addition to a large college dispensary, *furnish* the clinical resources; the material is abundant and varied. The first two years of the course are taken at New York or at Ithaca and the work is devoted to the fundamental scientific subjects. The last two years are spent mostly in practical and clinical work and the hospital advantages are utilized. The Loomis Laboratory, a five-story modern building, is well equipped *and supplies* ample practical laboratory facilities required in the advanced work. "The essential feature of the entire system is the division of the classes of the several years into small sections." Fees: First year, $190; second and third, $180 each, and $200 *for* the fourth year. The Dean is Dr. William M. Polk. Total registration for 1902-3 was *394; graduates*, 60. The next session opens Sept. 30, 1903, and closes June 8, 1904.

University and *Bellevue Hospital* Medical College.—This is a department of the New York University, and was *founded* in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. The faculty is composed of 26 professors and 81 instructors, assistants, etc., in all 107. Bellevue and City hospitals,

hospitals of the Workhouse and Almshouse, Manhattan State Hospital for the Insane, Willard Parker and Reception hospitals, Riverside Hospital for Contagious Diseases, Randall's Island, Presbyterian, St. Luke's, St. Vincent's, General Memorial, Gouverneur, Columbus, Harlem, New York Foundling, and the Society for the Lying-in hospitals, the New York Eye and Ear Infirmary, and a large college dispensary are open to students of this school for a study of clinical cases. The Carnegie building, a new five-story structure adjoining the college, is devoted to laboratory instruction and investigation, and, with the other two large college buildings, affords good laboratory and lecture-room facilities. The course of instruction covers four years of eight months each. Actual clinical teaching, in conjunction with and founded on laboratory work, recitation and didactic teaching, is emphasized to the greatest possible degree. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Edward G. Janeway. Total registration for 1902-3 was 311; graduates, 73. The next session opens Sept. 30, 1903, and closes June, 1904.

New York Homeopathic Medical College and Hospital.—This school, organized in 1861, has a faculty of 29 professors and 33 lecturers, instructors, etc., 62 in all. Flower Hospital, adjoining the college and having a completely equipped out-patient department, Metropolitan, Hospital, New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children furnish the clinical facilities. The course covers four years of seven months each. Total fees for the first year, $110; second, $130; third, $125, and $155 for the fourth year. The Dean is Dr. W. H. King, 64 W. 51st St. Total students registered for 1902-3 was 111; graduates, 29. The next session begins Oct. 6, 1903, and ends May 12, 1904.

New York Medical College and Hospital for Women.—Homeopathic. This school was organized in 1863, and has a faculty of 24 professors, 20 lecturers and assistants, total, 44. The college hospital and dispensary, the Memorial Hospital for Women, Metropolitan, Flower and the Laura Franklin Free Hospital for Children afford clinical material. The course covers four years of twenty-six weeks each. Fees: First year, $155; second, $135; third, $125, and $155 for the fourth year. The Dean is Dr. M. Belle Brown, 30 W. 51st St. Total registration for 1902-3 was 34; graduates, 8. The next session opens Sept. 29, 1903, and closes May 13, 1904.

Eclectic Medical College of the City of New York.—This was organized in 1865 and has a faculty of 15 professors and 15 lecturers, demonstrators, etc., 30 in all. A college dispensary, Beachonian Dispensary, Manhattan and Red Cross hospitals and Muncie Sanatorium supply clinical facilities. The work covers four years of seven months each. The total fees: First year, $125; second, $125; third, $125, and $155 for the fourth year. The Dean is Dr. George W. Boskowitz. Total registration for 1902-3 was 104; graduates, 13. The next session opens Sept. 23, 1903, and closes May, 1904. This school is a member of the National Confederation of Eclectic Medical Colleges.

Albany.

Albany Medical College.—This school was organized in 1838, and in 1873 it assumed its present relations, as Medical Department of Union University. The faculty is composed of 19 professors and 45 lecturers, instructors and assistants, a total of 64. Albany, St. Peter's, Child's and County hospitals, South End Dispensary, Eye and Ear Infirmary and the Albany Hospital for Incurables, also the free dispensaries connected with each, are open to students for clinical study. The curriculum embraces graded work for four years of seven and one-half months each. Teaching is carried on in the laboratories, clinics and lecture rooms. Examinations are held twice a year in all subjects. Fees: Third year, $110, and $130 for each other year. The Dean is Dr. Albert Vander Veer. Total registration for 1902-3 was 165; graduates, 33. The next annual session opens Sept. 22, 1903, and closes May 3, 1904.

Buffalo.

University of Buffalo Medical Department.—This was organized in 1846 and has a faculty made up of 48 professors and 31 assistants, lecturers, etc., a total of 79. Buffalo General Hospital, Hospital of the Sisters of Charity, Erie County and German hospitals and the German Deaconess' Hospital supply amply clinical material for study. A college dispensary, recently organized, is also of value in practical work. The buildings and hospitals are well equipped for clinical and laboratory work. Bedside instruction is insisted on and the senior students are permitted to assist in operations and give anesthetics. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The total fees are: First year, $455; second, $55, and $15 each for the third and fourth years. The Dean is Dr. Matthew D. Mann, 37 Allen St. Total registration for 1902-3 was 237; graduates, 45. The fifty-eighth session opens Sept. 28, 1903, and closes May 3, 1904.

Syracuse.

College of Medicine, Syracuse University.—This school was organized in 1872 as the Medical Department of Syracuse University. The faculty is composed of 16 professors and 34 lecturers, instructors, etc., in all 50. Clinical facilities are furnished by St. Joseph's Hospital, with a capacity of 200 patients; Hospital of the House of the Good Shepherd, Syracuse Hospital for Women and Children, Onondaga County Orphan Asylum, and the Syracuse Free Dispensary. The laboratories and amphitheaters are large and well equipped. This school is a member of the Association of American Medical Colleges. The curriculum embraces a four years' graded course, eight months making a school year. The total fees for each of the four years are $130. The Dean is Dr. Henry D. Didama, 424 S. Salina St. Total number of students registered for 1902-3 was 140; graduates, 29. The next session opens Oct. 6, 1903, and closes June 9, 1904.

NORTH CAROLINA.

North Carolina, population 1,893,810, has three medical schools which grant degrees and one which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill (population 1,099) and at Raleigh (population 13,643). The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is located at Davidson (population 904). Wake Forest School of Medicine is at Wake Forest (population 823).

Chapel Hill and Raleigh.

University of North Carolina Medical Department.—This school was organized in 1891, and formerly gave only the work of the first two college years, at Chapel Hill. In 1902 the course was extended to four years by the establishment of a department at Raleigh in which the last two years are given. Degrees will now be conferred, and the faculty in the completed school of medicine numbers 25. It is a member of the Association of American Medical Colleges. The number of students enrolled in 1902-3 was 83; graduates, 4. Total fees are $85 per year. Board, room, light and heat may be had for from $84 to $102 per college year. The President is Dr. F. P. Venable, Chapel Hill. The next session will begin Sept. 7, 1903, and end June, 1904.

Raleigh.

Leonard School of Medicine.—This department of Shaw University was established in 1882 by the American Baptist Home Mission Society to train colored students of medicine. It has a faculty of 11. A free hospital and dispensary supply clinical material., A preliminary entrance examination is given to applicants not possessing a certificate or diploma of educational requirements. The course covers four years of six months each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room costs $2 a week. The Dean is Dr. James McKee. Total enrolment for 1902-3 was 113; graduates, 23. Next session opens Oct. 1, 1903, and closes April 14, 1904.

Davidson.

North Carolina Medical College.—This school was organized in 1893 and has a faculty of 19. A small hospital supplies the clinical facilities. The course covers four years of eight months each. Fees: First three years, $85 each, and $100 for the fourth year. The president is Dr. J. P. Monroe. The total registration for 1902-3 was 67; graduates, 10. The next session begins September, 1903, and closes May, 1904.

Wake Forest.

Wake Forest School of Medicine.—This school was organized in 1902. It only gives the first two years of the medical course. It has a faculty of 5, and last year enrolled 10 students. The fees are $85 a year. The President is Dr. C. E. Taylor, Wake Forest.

OHIO.

Ohio, population 4,157,545, has ten medical colleges. Four of these, the Medical College of Ohio, Eclectic Medical Institute, Miami Medical College, and Pulte Medical College are located in Cincinnati, a city of 325,902 inhabitants. The clinical advantages of Cincinnati are good; beside many smaller hospitals, the Cincinnati Hospital is open to the students for study. Board can be procured in Cincinnati for from $3 to $5 per week. The Laura Memorial Woman's Medical College has ceased to exist.

Cleveland, population 381,768, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. The City Hospital, with 275 beds, is used in common by them for clinical study. Board and lodging can be had for from $2.50 to $5 a week.

Columbus, population 125,560, contains two: Starling Medical College and Ohio Medical University. Board and lodging cost from $2.50 to $5 per week.

Toledo, with 131,822 people, has one medical school: Toledo Medical College. It has good clinical advantages. Board and room can be had for from $3 to $5 per week.

The laws of Ohio require that in order to practice medicine in this state, any student not possessing a diploma or certificate showing that he is possessed of the educational advantages required, must pass a satisfactory examination, under the direction of the State Board of Medical Registration and Examination, in the following subjects: Foreign languages—Two years of the Latin language. English—English literature, composition and rhetoric. History—United States history and civics, with reference to the constitutional phases of American history. Mathematics—Algebra through equations and plane geometry. Science—Botany or zoology; physiography or chemistry, and physics. This is the standard adopted by all the medical colleges in the state.

Cincinnati.

Medical College of Ohio.—This is the Medical Department of the University of Cincinnati, organized in 1819, and has a faculty months each. Fees: First year, $42; second, $37; third, $30, and $40 for the fourth year. The Secretary is Dr. H. M. Green. Total number of students for 1902-3 was 23; graduates, 6. The next session opens Dec. 1, 1903, and closes in June, 1904.

Chattanooga.

Chattanooga Medical College.—This is the Medical Department of Grant University, and was organized in 1889. The faculty consists of 10 professors and 18 instructors, demonstrators, etc., total 28. Adequate clinical facilities are afforded by the wards of Baroness Erlanger Hospital, a county asylum, an out-door clinic maintained in the college building and all material furnished by the city physician's office which the faculty desire to utilize. The scholastic requirements are those of the Association of Southern Medical Colleges, and involve a strictly graded course covering four years of seven months each. The total fees approximate $65 each session. The trustees have materially added to the general facilities of the institution by the recent erection of another fine four-story building of brick and stone for the medical department, wherein much modern and elaborate equipment has been installed. The Dean is Dr. E. A. Cobleigh. The total enrolment for the session of 1902-3 was 264, of which 41 graduated. The fifteenth annual term opens Oct. 7, 1903, and ends about May 15, 1904.

Chattanooga National Medical College.—Colored. This was organized in 1898, and claims a teaching force of 18. The course covers four years of seven months each. The total fees are $50 each year with an additional graduation fee of $20. Total enrolment for 1902-3 was 9; graduates, 1. The Dean is Dr. T. W. Haigler, 602 E. 8th St. The next session begins September, 1903, and ends March, 1904.

Memphis.

Memphis Hospital Medical College.—This school, organized in 1878, has a faculty of 10 professors and 18 assistants, beside quiz masters. Excellent clinical facilities are furnished by the City Hospital, Presbyterian Hospital, St. Joseph's Hospital and the East End Dispensary, the latter being located in the college building. The course includes graded work for four years of six months each. The total fees for the first three years are $75; for the fourth, $105. The Dean is Dr. W. B. Rogers. Total registration for 1902-3 was 675; graduates, 195. The twenty-fourth annual session will begin Nov. 1, 1903, and close April, 1904.

Jackson.

University of West Tennessee Medical Department.—Colored. This school, organized in 1900, has a faculty of 10. The course is four years of seven months each. The fees are $40 per year, graduation $10 extra. Registration, 1902-3, 17; no graduates. The next session opens Sept. 3, 1903.

Sewanee.

Medical Department of the University of the South (Sewanee Medical College).—This school was organized in 1891 and has a faculty of 22. It is a member of the Southern Medical College Association. The course is four years of six months each. The fees are $65 for each of the first two years, $55 for the third and $75 for the last year. The Dean is Dr. John S. Cain. Total enrolment for 1902-3 was 203; graduates, 38. The twelfth session commenced May, 1903, and will close January, 1904.

TEXAS.

Texas, population 3,048,710, has six medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants. Good board and room can be procured for from $15 to $20 a month.

The Medical Department of Fort Worth University is at Fort Worth, population 35,000. The cost of board and room in that city is from $12 to $15 a month.

The Baylor University College of Medicine, the Dallas Medical College, the Medical Department of Southwestern University and the Physio-Medical College of Texas are situated in Dallas, population 55,000.

Galveston.

University of Texas Medical Department.—This department of the State University was organized in 1891 and has a faculty of 25. The John Sealy Hospital, also having an outdoor department, and St. Mary's Infirmary supply good material for clinical study. The requirements for admission are proof, either by certificate or examination, that the candidate is sufficiently proficient in English, including grammar, composition and rhetoric; mathematics through plane geometry and algebra including quadratics, and general history. The curriculum embraces graded work for four years of eight months each. Fees, to residents of the state: First year, $50; second and third each $20, and $5 for the fourth. Non-residents of the state are required to pay an additional fee of $50 each year. The President is Dr. William L. Prather. Total registration for 1902-3 was 179; graduates, 35. The next session begins Oct. 1, 1903, and ends in May, 1904.

Fort Worth.

Medical Department of Fort Worth University.—This school was organized in 1894, and has a faculty of 17 professors and 15 lecturers, assistants, etc., in all 32. Clinical facilities are supplied by St. Joseph's Hospital, with 200 beds; the Benevolent Home, containing 75 beds; the Delia Collins' Rescue Home, having 50 beds, and a college dispensary. The school is a member of the Southern Medical College Association. The course covers four years of six months each. The total fees for each of the first three years are $75, and $100 for the fourth year. The Dean is Dr. Bacon Saunders. The total enrolment for 1902-3 was 108; graduates, 5. The next session opens Oct. 1, 1903, and closes April 7, 1904.

Dallas.

Baylor University College of Medicine.—This is a new name for the University of Dallas Medical Department, which was organized in 1901. In June, 1903, it became the Medical Department of Baylor University of Waco. The faculty numbers 19 professors and 21 assistants, total 40. Parkland Hospital, with 90 beds; St. Paul's Sanitarium, Good Samaritan, and Policlinic Infirmary and a college dispensary and hospital are utilized for clinical study. The course covers four years of six months each. The school is a member of the Association of Southern Medical Colleges. The fees are $75 for each of the four years, with a matriculation fee of $5, paid once, and a graduation fee of $25. The Dean is Dr. E. H. Cary. Total registration for 1902-3 was 66; graduates 3. The next session opens Oct. 1, 1903, and closes April 5, 1904.

Southwestern University Medical College.—This is the Medical Department of Southwestern University and was organized in June, 1903, with a faculty of 28 professors and 11 instructors, total 39. The first session opens Oct. 1, 1903. The course of instruction is graded and covers four years. Requirements for admission are equivalent to those prescribed by the Association of American Medical Colleges. The fees are: Matriculation, $5, paid once; annual tuition, $75; graduation, $25. The hospitals represented by the faculty and [illegible] ching are: St. Paul's Sanitarium, City Hospital, [illegible] escue Home, Woman's Home, St. Joseph's Orpha [illegible] Home for Children, Dr. H. K. Leake's Private [illegible] Clinic of the Settlement Home and Presbyterian Home for Children. The Dean is Dr. John O. McReynolds.

Dallas Medical College.—We have been unable to secure information of this school, aside from newspaper reports, the Dean and Secretary having failed to reply to several letters. The school was the Medical Department of Trinity University, but this relation has been severed. Total enrolment, 1902-3, 150 (estimated); graduates, 29. The course is four years of about six months each.

Physio-Medical College of Texas.—This college was organized in 1902. It has a faculty of 24 professors and 4 assistants, total 28. The course is four years of twenty-six weeks each. The fees are, first year, $70; fourth year, $85; other years, $65. Enrolment, 1902-3, 20; graduates, 3. The Secretary is Dr. R. L. Spann. The next session opens Oct. 13, 1903, and closes April 16, 1904.

VERMONT.

Vermont, population 343,641, has one medical school, located at Burlington, a town of about 20,000 people. Board and room costs from $3.50 to $5 a week.

Burlington.

Medical Department University of Vermont.—This school was organized in 1822, but suspended from 1836 until 1854, when it was reorganized. The faculty consists of 18 professors, and 27 assistants, instructors, etc., in all 45. The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction. Applicants for admission must be graduates of a four-year high school course or take an examination to show equivalent educational qualifications. The laboratory and lecture-room space and equipment are good. The course of study embraces graded work for four years of seven months each. The total fees for each of the first three years are $115 and $140 for the fourth year. The Secretary is Dr. B. J. Andrews. Total registration of students for 1902-3 was 246; graduates, 31. The fifty-first session begins Nov. 28, 1903, and ends June 25, 1904.

VIRGINIA.

Virginia, population 1,854,184, has three medical colleges, situated in Charlottesville (population 6,449) and Richmond (population 85,050). The clinical facilities in Richmond are good. Board and room can be obtained for $18 a month, and upward, in Charlottesville, and from $12 to $20 a month in Richmond.

Charlottesville.

University of Virginia Department of Medicine.—This school was organized in 1827, and has a faculty of 31. A free dispensary and the new four-story hospital furnish clinical facilities. The requirements for admission are those of the Association of American Medical Colleges. The course is four years of nine months each. Fees: First year, $110; second, $100; third, $80, and $60 for the fourth year. Total enrolment for 1902-3 was 151; graduates, 25. The eightieth session opens Sept. 15, 1903, and closes June 15, 1904.

Richmond.

Medical College of Virginia.—This school was organized in 1838 as the Medical Department of Hampden Sidney College, and in 1854 the present name was assumed. The faculty is made up of 16 professors and 24 lecturers, instructors, etc., a total of 40. Clinical material is furnished by the Memorial Hospital and the City Free Dispensary; an outside obstetric department also furnishes opportunities for clinical work. The magnificent new Memorial Hospital, opened July, 1903, is under the exclusive control of this college for clinical purposes. The State Penitentiary, City Almshouse and other public charities and asylums of the city also afford opportunities for clinical work. This school is a member of the Southern Medical College Association. The buildings are large and contain well-equipped laboratories and amphitheaters. The course embraces four years of seven months each. The fees are $85 for each year, with an additional [illegible] $30. The Dean is Dr. Christopher Tompkins. [illegible] for 1902-3 was 210; graduates, 35. The next [illegible] 20, 1903, and will end May 10, 1904.

University College of Medicine.—This school was organized in 1893, and has a faculty of 19 professors, 34 lecturers, assistants, etc., a total of 53. Good clinical facilities are furnished by

Virginia Hospital, with a maternity department and annex, which was built especially for the purpose of affording bedside instruction; Richmond Eye, Ear and Throat Infirmary, containing 34 beds; the City Hospital, City Jail, State Penitentiary, and a college dispensary. Matriculation is in accord with the rules of the Association of American Medical Colleges, and of the Southern Medical College Association, to both of which this college belongs. The laboratory and lecture-room space and equipment are ample, and some of the instructors devote their entire time to the laboratories. The school lays especial importance on the careful instruction and guidance of each student. The curriculum covers four years of seven and one-half months each. The total fees are $85 for each year. The Dean is Dr. J. Allison Hodges, Richmond. Total enrolment for 1902-3 was 187; graduates, 44. The next session begins Sept. 29, 1903, and ends May 12, 1904.

WISCONSIN.

Wisconsin, population 2,069,042, has two medical colleges, the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons. They are both situated in Milwaukee, a city of 300,000 people. Clinical facilities are furnished them in common by the County Hospital with 300 beds, and the Milwaukee Hospital for the Insane. Board and lodging can be had for from $3 to $5 a week.

Milwaukee.

Milwaukee Medical College.—This school was organized in 1893, and has a faculty of 33 professors and 26 lecturers, instructors, etc., a total of 59. Good clinical material is furnished by Trinity, St. Mary's, and the County hospitals, Milwaukee Hospital for the Insane, and a college dispensary. This school is a member of the Association of American Medical Colleges. Ample laboratory and amphitheater facilities are afforded The course covers four years of seven months each. The total fees are $120 each for the first three years and $130 for the fourth year. The President is Dr. William H. Earles. Total number of students for 1902 3 was 184; graduates, 43. The tenth session begins Oct. 1, 1903, and will close about May 1, 1904.

Wisconsin College of Physicians and Surgeons.—This college was organized in 1893, and has a faculty composed of 26 professors and 21 associates, assistants, etc., a total of 47. St. Joseph's Hospital, containing 150 beds; the college dispensary, the Milwaukee County Hospital, and the Hospital for the Insane supply facilities for clinical study. The school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are well equipped. The curriculum includes four years of eight months each Fees: Matriculation, paid once, $5; general ticket, $100; for the use of the microscope, a fee of $2 is charged for each course. The Secretary is Dr. W. H. Washburn. Total enrolment for 1902-3 was 102; graduates, 23. The next session begins Sept. 29, 1903, and ends May 26, 1904.

Canadian Students in the United States.—In the table indicating homes of students, pages 454 to 457, those marked foreign include Canadians. This will explain the number in the "foreign" column, in certain colleges located near the border.

Southwestern University Medical Department.—The curators and trustees of the Southwestern University of Georgetown, Texas, have accepted the offer made by the Texas College of Physicians and Surgeons of Dallas, to make it the medical department of the University.

States That Have No Medical Schools. The following

Toronto, Ontario.

University of Toronto, Medical Faculty.—All the lectures and demonstrations are given in the laboratories and lecture rooms of the University; more than two-thirds of the instruction in the third and fourth years are given in the wards and in the pathologic and clinical laboratories. A fifth year is now required by the Ontario Medical Council. The faculty numbers 55. Clinical instruction is given in the Toronto General Hospital, Mercer Eye and Ear Infirmary, Burnside Lying-in Hospital, Hospital for Sick Children, and St. Michael's Hospital. Before commencing students must satisfy, as to qualifications, the College of Physicians and Surgeons of Ontario (Provincial Board). Fees are: Registration (payable once), $5; each of the first four years, $100; fifth year, $50; for the degree of M.B., and M.D., each $20 Number of students registered last session, 427; graduates, 90. The next session will commence Oct. 1, 1903. Trinity Medical College of Toronto, which has been in affiliation, has this year been amalgamated with the University. The matriculants of that school in 1902-3 were 165; graduates, 68.

Ontario Medical College for Women.—This college is not empowered to grant degrees, but it qualifies students fully to take the examination in any university. The faculty numbers 35. The fee for each year is $100, exclusive of hospital and university fees. The number of undergraduates, 1902 3, was 31; graduates, 5. The twentieth session will open Oct. 1, 1903, and continue for eight months

Kingston, Ontario.

Queen's University.—This school had 205 students registered in its medical department during 1902-3, and graduated 48. The faculty numbers 25.

London, Ontario.

Medical Department of Western University.—This school matriculates students in accordance with the requirements of the Provincial Council and has a course of five years. Victoria Hospital supplies the clinical advantages. The fees are about $90 per year and $25 extra for graduation. This school has nearly a hundred students and from 10 to 20 graduates annually. The next session runs from September to May.

Montreal, Quebec.

University of Bishop's College, Faculty of Medicine.—The course leading to the degree of C.M., M.D., extends over four years of nine months each. The annual fees are $100, which include all practical classes and material for the same. Students must, on entering the study of medicine, pass the college matriculation examination, or, if the license for the Province of Quebec is desired, that of the College of Physicians and Surgeons of that Province. Special facilities are offered for the practical teaching of obstetrics, and undergraduates are obliged to take entire charge of several accouchements before being allowed to take the final examination. Other clinical facilities are offered in the Montreal General Hospital, the Royal Victoria Hospital, the Western Hospital, the Hotel Dieu, and the Woman's Hospital. During the last session the students numbered 70; graduates, 5. The next session will open Sept. 15, 1903.

McGill University, Faculty of Medicine.—This college has a course of four years of nine months each. The faculty numbers 20 professors and 61 assistants, total 81. The total fees for the course are $500. Clinical instruction is given in the Montreal General Hospital, Royal Victoria Hospital, and Montreal Maternity Hospital. Students, except university graduates in arts, must pass the medical matriculation of this university or that of one of the provincial medical boards. Students registered during session 1902-3, 435; graduates in June, 1903, 100. The seventy-second session will commence Sept. 22, 1903.

Ecole de Medecine et de Chirurgie de Montreal.—This is the Montreal branch of Laval University's medical faculty in Quebec. It is a French school, organized in 1845. The faculty numbers 47. The registration, 1902-3, was 220; graduates, 45.

Quebec, P. Q.

Universite Laval, Faculté de Medecine.—This is the Quebec branch of Laval University medical faculty. The course consists of four years. The fees for the entire course are from $200 to $300, according to preliminary qualifications. The matriculants are about 100 annually, and the graduates about 20.

Halifax, Nova Scotia.

Faculty of Medicine of Dalhousie University.—The course consists of four years of eight months each, and leads to the final M.D. and C.M. examination. Prospective students must pass the preliminary examination of the Provincial Medical Board, a university examination or a recognized equivalent. During last session there were 80 students, of whom 20 graduated. The faculty numbers 23, and the next session is from September to April.

Halifax Medical College.—The course is four years of eight months each. Matriculants have to be examined by the Provincial Council, as the college does not conduct entrance examinations. The faculty numbers 30. Fees are about $300 for the whole course and $30 for graduation. The students, 1902-3, numbered 77; graduates, 19. The next session begins Sept. 1, 1903, and ends April 26, 1904.

Winnipeg, Manitoba.

Manitoba Medical College.—This is in affiliation with the University of Manitoba, and has a faculty of 21. Winnipeg General Hospital and St. Boniface Hospital supply clinical material. The fees are $400 for the course of four years. There were 94 students in 1902-3, and 17 graduates.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission to be maintained by colleges belonging to this Association are as follows:

Section 1.—Each college holding membership in this Association shall require of each student, before admission to its course of study, an examination, the minimum of which shall be as follows:

1. In English, a composition on some subject of general interest. This composition must be written by the student at the time of the examination, and should contain at least 200 words. It should be criticised in relation to thought, construction, punctuation, spelling, and handwriting.

2. In Arithmetic, such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, and ratio and proportion.

3. In Algebra, such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

4. In Physics, such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

5. In Latin, an examination on such elementary work as the student may offer, showing a familiarity usually attained by one year of study; for example, the reading of the first 15 chapters of Cæsar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

Sec. 2.—In place of this examination, or any part of it, colleges, members of this Association, are at liberty to recognize the official certificates of reputable literary and scientific colleges, academies, high schools, and normal schools, and also

Name of College.	Estimated population of city in which college is located.	No. of students registered, session 1902-3.	Graduates, 1903.	Total number of teachers.	Number of weeks in college year.	Total graduates in all colleges in state, 1903.	Total students in all colleges in state, 1902-3.
ALABAMA						34	239
Birmingham Medical College.—R.	38,000	94	22	32	24		
Medical College of Alabama.—R.	"	145	12	18	24		
ARKANSAS						12	236
Medical Department Arkansas University.—R.	60,000	236	12	36	24		
CALIFORNIA						145	683
Cooper Medical College.—R.	400,000	212	45	40	32		
Medical Department University of California.—R.	"	115	26	70	36		
California Medical College.—E.	"	60	7	28	32		
Hahnemann Medical College of the Pacific.—H.	"	38	12	42	28		
College of Physicians and Surgeons, San Francisco.—R.	"	146	28	46	36		
Oakland College of Medicine and Surgery.—R.	67,000	6	....	21	32		
College of Medicine, University of Southern California.—R.	102,479	106	27	34	32		
COLORADO						47	222
Denver and Gross College of Medicine.—R.	175,000	130	33	83	32		
Denver Homeopathic College.—H.	"	29	6	32	28		
Colorado School of Medicine.—R.	6,150	63	8	27	36		
CONNECTICUT						27	145
Yale University, Medical Department.—R.	115,000	145	27	52	32		
DISTRICT OF COLUMBIA						94	582
Columbian University, Department of Medicine.—R.	278,718	260	34	56	32		
Georgetown University School of Medicine.—R.	"	144	22	53	32		
Howard University, Medical Department.—R.	"	141	29	35	28		
National University, Medical Department.—R.	"	37	9	37	32		
GEORGIA						43	356
Atlanta College of Physicians and Surgeons.—R.	89,872	200	34	28	24		
Georgia College of Eclectic Medicine and Surgery.—E.	"	46	2	12	24		
Medical College of Georgia.—R.	39,441	110	7	24	24		
ILLINOIS						850	4,055
American Medical Missionary College.—R.	1,900,000	88	22	25	36		
Bennett College of Eclectic Medicine and Surgery.—E.	"	113	18	37	26		
Chicago Homeopathic Medical College.—H.	"	130	37	63	30		
College of Medicine and Surgery.—Ph.M.	"	76	12	44	28		
College of Physicians and Surgeons, Chicago.—R.	"	685	216	133	32		
Hahnemann Medical College and Hospital.—H.	"	195	69	60	28		
Harvey Medical College.—R.	"	330	20	63	40		
Hering Medical College.—H.	"	90	22	44	28		
Illinois Medical College.—R.	"	265	47	45	24		
Jenner Medical College.—R.	"	107	13	53	44		
Northwestern University Medical School.—R.	"	608	127	108	36		
Rush Medical College.—R.	"	1,047	220	166	36		
National Medical University	"	173	17	76	36		
American College of Medicine and Surgery.—E.	"	126	10	65	32		
INDIANA						117	550
Central College of Physicians and Surgeons.—R.	169,164	115	22	68	28		
Medical College of Indiana.—R.	"	332	76	68	28		
Physio-Medical College of Indiana.—Ph.M.	"	29	9	30	26		
Eclectic Medical College of Indiana.—E.	"	28	5	31	24		
Fort Wayne College of Medicine.—R.	45,115	46	5	34	28		
IOWA						126	667
Keokuk Medical College of Physicians and Surgeons.—R.	14,641	243	56	22	28		
Iowa College of Physicians and Surgeons.—R.	62,139	66	11	32	36		
Sioux City College of Medicine.—R.	33,111	72	13	15	32		
State University of Iowa, Homeopathic Medical Dept.—H.	7,987	35	11	20	36		
State University of Iowa, Medical Department.—R.	"	251	35	39	36		
KANSAS						22	184
College of Physicians and Surgeons of Kansas City.—R.	55,000	52	10	42	28		
Kansas Medical College.—R.	33,608	101	12	33	30		
School of Medicine, University of Kansas	10,862	31	....	18	....		
KENTUCKY						278	1,573
Hospital College of Medicine.—R.	225,000	421	69	44	24		
Kentucky School of Medicine.—R.	"	290	56	39	28		
Louisville Medical College.—R.	"	257	53	22	24		
Louisville National Medical College.—R.	"	26	4	19	28		
Southwestern Homeopathic Medical College.—H.	"	22	5	30	28		
Medical Department, University of Louisville.—R.	"	227	34	37	24		
Kentucky University, Medical Department.—R.	"	330	57	33	26		
LOUISIANA						87	447
Flint Medical College of New Orleans University	287,104	42	5	13	30		
Tulane University, Medical Department.—R.	"	405	82	41	28		
MAINE						20	100
Medical School of Maine, Bowdoin College.—R.	50,000	100	20	18	26		
MARYLAND						404	1,678
Baltimore Medical College.—R.	508,957	410	93	51	28		
Baltimore University School of Medicine.—R.	"	58	26	25	24		
College of Physicians and Surgeons of Baltimore.—R.	"	315	76	49	28		
Medical Department, Johns Hopkins University.—R.	"	257	49	74	34		
Southern Homeopathic Medical College.—H.	"	26	3	32	28		
University of Maryland, School of Medicine.—R.	"	392	96	55	30		
Woman's Medical College of Baltimore.—R.	"	16	2	27	32		
Maryland Medical College.—R.	"	204	59	33	32		
MASSACHUSETTS						204	1,025
Boston University School of Medicine.—H.	603,163	127	36	58	32		
College of Physicians and Surgeons.—R.	"	117	19	39	32		
Harvard University Medical School.—R.	"	432	114	138	36		
Tufts' College Medical School.—R.	"	349	35	74	32		
MICHIGAN						250	1,043
Detroit College of Medicine.—R.	300,000	257	62	71	28		
Detroit Homeopathic Medical College.—H.	"	52	14	35	28		
Michigan College of Medicine and Surgery.—R.	"	66	19	36	28		
Grand Rapids Medical College—R.	87,565	52	16	31	24		
Saginaw Valley Medical College.—R.	43,000	85	34	30	28		
University of Michigan Dept. of Medicine and Surgery.—R.	14,509	455	92	67	36		
University of Michigan Homeopathic Medical College.—H.	"	76	13	20	36		
MINNESOTA						110	456
College of Homeopthic Med. and Surg., Univ. of Minn.—H.	225,000	18	6	33	34		
College of Medicine and Surgery, Univ. of Minnesota.—R.	"	315	70	84	36		
Medical Department of Hamline University.—R.	"	123	34	40	36		
MISSOURI						522	2,476
Medico-Chirurgical College.—R.	163,752	83	19	61	24		
Woman's Medical College.—R.	"	16	1	50	28		

NAME OF COLLEGE.	Estimated population of city in which college is located.	No. of students registered, session 1902-3.	Graduates, 1903.	Total number of teachers.	Number of weeks in college year.	Total graduates all colleges in state, 1903.	Total students in all colleges in state, 1902-3.
MISSOURI.—*Continued*							
University Medical College of Kansas City.—R	163,732	222	63	46	28		
Kansas City Hahnemann Medical College.—H	"	71	17	38	28		
Kansas City Medical College.—R	"	122	24	45	28		
Eclectic Medical University.—E	"	61	15	22	24		
Central Medical College.—R	105,000	80	23	24	28		
Ensworth Medical College.—R	"	110	14	34	28		
Barnes' Medical College.—R	575,238	495	100	44	28		
Marion-Sims Beaumont College of Medicine.—R	"	391	88	95	28		
St. Louis College of Physicians and Surgeons.—R	"	270	62	49	28		
American Medical College.—E	"	78	18	14	28		
Homeopathic Medical College of Missouri.—H	"	66	13	31	28		
Medical Department, Washington University.—R	"	281	53	61	30		
University of the State of Missouri.—R	5,651	98	12	32	36		
[illegible]	....	....	....	....	....	83	366
[illegible] College of Medicine	102,555	138	38	55	32		
[illegible] ical College.—R	"	142	29	43	30		
[illegible] of Cotner University.—E	40,169	86	16	27	32		
[illegible]	....	....	....	....	....	14	65
[illegible] ege.—R	1,884	65	14	23	32		
NEW YORK	....	....	....	....	....	498	2,581
Albany Medical College.—R	100,000	165	33	64	30		
College of Physicians and Surgeeons.—R	3,437,202	795	168	114	32		
Cornell University Medical College.—R	"	394	60	142	30		
Eclectic Medical College.—E	"	104	13	30	28		
Long Island College Hospital.—R	"	290	40	73	30		
New York [illegible] College and Hospital.—H	"	111	29	62	28		
New York [illegible] Hospital for Women.—H	"	34	8	44	26		
University [illegible] Medical College.—R	"	311	73	107	32		
Syracuse [illegible] Medicine.—R	108,374	140	29	50	32		
[illegible] epartment.—R	352,387	237	45	79	28		
[illegible]	....	....	....	....	....	37	273
[illegible] l.—R	13,643	113	23	11	24		
[illegible] Medicine	823	10	....	5	....		
[illegible] College.—R	904	67	10	19	32		
Medical Department, University of North Carolina	13,643	83	4	25	28		
OHIO	....	....	....	....	....	365	1,188
Western Reserve University Medical College.—R	381,768	97	26	51	32		
Cleveland College of Physicians and Surgeons.—R	"	86	22	63	32		
Cleveland [illegible] l College.—H	"	115	40	56	30		
Eclectic " [illegible]	325,902	146	45	29	30		
Laura M[illegible] ical College.—R	"	20	7	....	....		
Medical College of Ohio.—R	"	170	54	50	32		
Pulte Medical College.—H	"	30	10	32	28		
Miami Medical College.—R	"	106	40	47	32		
Ohio Med[illegible]	125,560	214	58	34	32		
Starling " [illegible]	"	163	49	36	32		
Toledo M[illegible]	131,822	41	14	38	32		
OREGON	....	....	....	....	....	17	128
University of Oregon Medical Department.—R	100,000	88	10	27	28		
Medical Department, Willamette University.—R	4,258	40	7	16	24		
PENNSYLVANIA	....	....	....	....	....	548	2,456
Temple College of Philadelphia, Dept. of Medicine	1,293,697	70	....	37	36		
University of Pennsylvania Department of Medicine.—R	"	469	111	103	36		
Hahnemann Medical College and Hospital.—H	"	233	69	56	32		
Jefferson Medical College.—R	"	771	166	102	32		
Woman's Medical College of Pennsylvania.—R	"	165	30	53	32		
Medico-Chirurgical College of Philadelphia.—R	"	431	93	77	32		
Western Pennsylvania Medical College.—R	321,616	317	79	70	32		
SOUTH CAROLINA	....	....	....	....	....	21	95
Medical College of the State of South Carolina.—R	55,807	95	21	21	24		
TENNESSEE	....	....	....	....	....	447	2,134
Tennessee Medical College.—R	32,637	62	8	20	28		
Knoxville Medical College.—R	"	23	6	13	24		
Medical Department of University of Nashville.—R	80,865	317	50	27	26		
Vanderbilt University Medical Department.—R	"	162	34	35	24		
University of Tennessee, Medical Department.—R	"	150	33	27	24		
Meharry Medical College.—R	"	252	41	22	24		
Memphis Hospital Medical College.—R	102,320	675	195	28	24		
Sewanee Medical College.—R	1,200	203	38	22	24		
Chattanooga National Medical College.—R	30,154	9	1	18	28		
Chattanooga Medical College.—R	"	264	41	28	28		
University of West Tennessee, Medical Department	15,000	17	....	10	28		
TEXAS	....	....	....	....	....	75	523
Medical Department Fort Worth University.—R	35,000	108	5	32	24		
University of Texas Department of Medicine.—R	37,789	179	35	25	32		
Baylor University College of Medicine	55,000	66	3	40	24		
Physio-Medical College of Texas	"	20	3	28	26		
Dallas Medical College.—R	"	150	29	40	24		
VERMONT	....	....	....	....	....	31	246
University of Vermont Medical Department.—R	20,000	246	31	45	28		
VIRGINIA	....	....	....	....	....	104	557
Medical College of Virginia.—R	85,050	219	35	38	28		
University College of Medicine.—R	"	187	44	53	30		
University of Virginia Department of Medicine.—R	6,449	151	25	31	36		
WISCONSIN	....	....	....	....	....	66	286
Milwaukee Medical College.—R	300,000	184	43	59	28		
Wisconsin College of Physicians and Surgeons.—R	"	102	23	47	32		

The Family Physician to the Medical Attendant at the Health Resort.—A writer in the *Corr.-Blatt f. Schweizer Aerzte* calls attention to an antiquarian catalogue, which lists a number of letters written 1865 to 1888 by prominent Swiss physicians commending certain patients to the care of a physician at a watering place, and posting in regard to the details of each case. Another bunch of similar letters written by a physician at Zurich, still in active practice and addressed to a resort physician, are offered for sale at 37c. each. These facts warrant great care on the part of physicians in the matter of such correspondence, and impose greater prudence on the resort physicians not to allow such letters to be exploited for gain. The article concludes with an appeal to resort physicians to reply to these carefully-written letters, a courtesy and necessity which is too often neglected. The family physician is anxious to know the measures attempted and the results, and will be grateful for any aids in the diagnosis if communicated in writing. Any such communications given orally to the patients are liable to be misunderstood and defectively transmitted.

TABLE SHOWING DISTRIBUTION OF

NAME OF COLLEGE.*	Alabama.—524	Arizona.—4	Arkansas.—561	California.—612	Colorado.—195	Connecticut.—290	Delaware.—60	D. of Colum.—139	Florida.—115	Georgia.—463	Idaho.—28	Illinois.—2619	Indian Ter.—103	Indiana.—1111	Iowa.—1095	Kansas.—612	Kentucky.—1016	Louisiana.—470	Maine.—231	Maryland.—465	Massach'ts.—1171
Birmingham Medical College	92	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical College of Alabama	135	...	...	...	...	...	...	...	3	...	...	...	...	...	1	...	...	...	...	...	...
Medical Department Arkansas University	...	...	213	...	...	...	...	...	...	...	...	...	7	...	...	...	...	6	...	...	...
Coll. of Physicians and Surgs., San Francisco	...	...	...	60	...	1	...	...	...	...	...	8	...	5	5	3	2	1	...	...	...
Cooper Medical College	...	...	...	186	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
California Medical College	...	2	...	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coll. of Med., University of So. California	...	...	...	81	2	...	...	...	...	...	...	6	...	...	3	...	...	...	...	...	...
Oakland College of Medicine and Surgery	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hahnemann Medical College of the Pacific	...	...	...	34	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
University of California Med. Department	...	...	...	107	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Denver Homeopathic College	...	...	...	...	15	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	2
Colorado School of Medicine	...	...	...	...	37	...	...	...	...	...	...	1	...	2	5	...	1	...	3	...	...
Denver and Gross College of Medicine	1	...	1	1	74	1	...	...	...	...	1	5	...	2	4	2	3	1	...	...	2
Yale University Medical Department	...	...	...	...	...	100	1	...	...	...	...	...	...	...	...	2	...	...	...	...	14
Howard University Medical Department	2	...	1	...	...	...	...	35	4	9	...	2	...	3	1	4	3	1	...	3	1
Medical Department Columbian University	...	...	1	1	...	2	...	38	...	4	1	10	...	7	1	1	3	3	5	30	5
University of Georgetown Med. Department	1	...	...	...	1	3	1	42	1	...	...	3	...	...	...	1	1	1	...	8	27
Atlanta College of Physicians and Surgeons	17	...	...	...	...	1	...	...	11	153	...	...	1	...	...	...	1	...	...	...	...
Medical College of Georgia	1	...	...	...	...	...	...	...	...	94	...	...	...	...	...	...	...	...	...	...	...
Georgia Coll. of Eclectic Med. and Surg.	3	...	4	...	...	...	...	...	1	35	...	...	1	...	...	...	...	...	...	...	...
American Medical Missionary College	...	...	...	5	1	...	...	...	1	...	...	4	...	1	13	2	...	...	1	...	1
Bennett Coll. of Eclectic Med. and Surg.	...	...	...	1	...	...	...	...	...	...	...	67	...	7	5	...	...	...	...	...	...
Chicago Homeopathic Medical College	...	...	...	1	...	...	...	...	...	...	...	57	...	12	16	5	1	...	1	...	...
College of Medicine and Surgery	1	...	...	2	2	1	...	...	...	...	1	30	...	4	2	...	1	...	...	...	1
Harvey Medical College	...	...	...	...	...	...	...	...	...	...	...	330	...	...	...	...	...	...	...	...	...
Coll. of Phys. and Surgs. of Chicago	...	...	3	3	1	1	...	1	1	...	...	379	...	25	81	15	1	1	...	...	1
Jenner Medical College	...	...	...	1	2	...	...	...	...	...	...	82	...	1	2	...	1	...	...	1	...
Hahnemann Medical College and Hospital	...	...	...	2	...	1	3	...	...	...	1	80	...	5	32	5	1	...	...	...	2
Hering Medical College	...	...	...	1	2	...	...	...	...	...	...	58	1	3	2	4	...	...	...	...	...
Illinois Medical College	1	...	...	2	2	...	...	...	...	1	6	67	...	52	4	7	3	3	...	...	1
Northwestern University Medical School	...	...	...	5	2	...	...	...	...	...	1	251	2	22	107	14	...	1	...	1	...
Rush Medical College	...	...	6	12	10	...	...	...	...	1	1	382	1	81	92	30	9	1	1	1	8
National Medical University	...	...	1	2	1	1	...	...	...	1	...	99	2	3	10	5	2	...	...	1	...
American College of Medicine and Surgery	3	...	2	2	2	2	...	...	...	4	...	34	1	21	2	1	2	1	2	1	1
Central Coll. of Phys. and Surgs. of Indiana	...	...	...	...	...	...	...	...	...	...	...	4	...	97	3	...	1	...	...	...	...
Eclectic Medical College of Indiana	...	...	...	1	...	...	...	...	...	...	...	...	...	26	...	...	...	...	...	...	...
Medical College of Indiana	2	...	1	...	1	...	...	...	...	...	...	15	...	300	1	...	...	...	...	...	...
Physio-Medical College of Indiana	...	...	...	...	...	...	...	...	...	...	...	3	...	16	...	...	...	...	...	...	...
Fort Wayne College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	35	...	...	...	...	...	...	...
Keokuk Med. Coll. of Phys. and Surgs.	...	...	...	1	3	...	...	...	...	...	1	48	...	3	128	7	...	...	...	...	...
Iowa College of Physicians and Surgeons	...	...	...	...	...	...	...	...	...	...	...	1	...	...	61	...	...	...	...	...	...
Sioux City College of Medicine	...	...	...	...	...	...	...	...	...	...	...	2	...	1	49	...	...	...	...	...	...
State University of Iowa Homeo. Med. Dept.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34	...	...	...	...	...	...
State University of Iowa Med. Dept.	...	...	...	1	...	...	...	...	...	...	...	10	...	...	230	1	...	...	...	...	...
Coll. of Phys. and Surgs. of Kansas City	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	32	...	...	...	...	...
Kansas Medical College	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	93	...	...	...	...	...
School of Medicine of University of Kansas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	31	...	...	...	...	...
Hospital College of Medicine	2	...	5	...	...	...	...	...	3	...	...	7	2	35	...	6	291	3	...	...	...
Louisville Medical College	14	...	6	...	...	...	...	...	1	7	...	3	3	33	...	6	71	8	...	...	...
Louisville National Medical College	...	...	...	...	...	...	...	...	...	...	...	1	...	4	...	...	17	...	...	...	...
Kentucky School of Medicine	2	...	4	...	1	1	...	...	2	2	1	7	3	61	...	1	92	...	1	1	2
S. W. Homeopathic Medical College	...	...	...	...	...	...	...	...	...	...	...	1	...	8	...	...	11	...	...	...	...
Medical Department University of Louisville	...	...	2	1	1	...	...	...	...	1	...	7	...	38	1	...	116	2	...	...	...
Kentucky University Medical Department	6	...	5	1	...	...	...	...	2	5	...	5	3	43	1	5	155	6	1	...	2
Flint Med. College of New Orleans Univ.	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	20	...	...	...
Tulane University Medical Department	28	1	17	...	1	...	...	...	11	2	...	...	...	1	...	...	1	211	...	1	...
Med. School of Maine at Bowdoin Coll.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	88	...	7
Baltimore Medical College	1	...	...	...	...	14	1	1	1	4	...	3	...	3	...	...	...	...	13	76	63
Baltimore University School of Medicine	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	1	...	1	12	6
Coll. of Phys. and Surgs., Baltimore	3	...	...	1	1	16	4	...	1	4	...	...	...	2	...	...	1	...	6	40	26
Med. Dept. Johns Hopkins University	7	...	...	9	2	10	...	3	3	7	...	11	...	4	8	2	7	...	13	42	11
Southern Homeopathic Medical College	...	...	...	...	...	...	4	1	...	...	...	...	...	...	...	...	...	...	...	12	...
University of Maryland School of Medicine	...	...	1	...	...	...	4	1	7	15	...	...	...	...	...	...	2	...	2	155	9
Woman's Medical College of Baltimore	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	9	...
Maryland Medical College	3	...	1	1	...	3	4	...	4	8	...	...	1	...	1	...	1	4	7	36	9
Boston University School of Medicine	1	...	...	1	...	3	...	...	1	...	...	...	...	...	...	...	...	...	6	...	84
College of Physicians and Surgeons	...	...	...	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	1	1	80
Harvard University Medical School	...	...	...	5	...	5	...	...	...	...	...	7	...	1	...	...	...	...	20	...	330
Tufts College Medical School	...	...	1	...	1	6	...	...	...	...	...	...	...	...	1	...	...	...	14	...	273
Detroit College of Medicine	...	...	...	...	...	...	...	1	...	...	...	1	...	...	2	...	...	...	...	...	1
Saginaw Valley Medical College	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1
Univ. of Mich. Dept. of Med. and Surg.	2	...	1	4	1	1	...	...	1	3	...	25	1	14	11	2	2	...	...	...	2
Grand Rapids Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
University of Michigan Homeo. Med. Coll.	1	...	...	...	...	...	...	...	...	...	...	1	...	6	...	...	...	...	2	...	1
Michigan College of Medicine and Surgery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Detroit Homeopathic Medical College	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
College of Homeo. M. and S., Univ. of Minn.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hamline University College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
University of Minn. College of M. and S.	...	...	...	1	...	...	...	...	...	...	...	2	...	...	13	2	...	...	...	...	...
Medico-Chirurgical College	...	...	2	1	1	...	...	...	...	...	...	3	3	...	1	19	...	2	...	...	1
Ensworth Medical College	...	...	...	...	...	...	...	...	...	...	...	2	...	...	7	8	1	...	...	...	...
Woman's Medical College	...	...	3	...	2	...	...	...	...	...	...	...	1	...	...	2	...	...	...	...	...
Central Medical College	...	...	...	...	1	...	...	...	...	...	1	...	1	2	5	10	...	...	...	...	...
Barnes Medical College	1	...	30	...	2	...	...	...	1	...	2	99	12	10	18	15	8	1	...	...	1
University Medical College of Kansas City	...	...	...	2	1	...	...	...	...	...	...	4	4	...	7	80	...	...	...	...	...
Kansas City Hahnemann Medical College	...	...	...	2	...	...	...	...	1	...	...	...	...	1	1	26	1	...	...	...	...
Marion-Sims-Beaumont College of Medicine	...	1	6	2	1	...	...	...	...	...	...	133	1	9	11	20	1	3	...	...	...
St. Louis Coll. of Phys. and Surgs.	1	...	15	...	1	...	...	...	...	...	1	82	3	8	21	4	9	1	...	...	...
American Medical College	...	...	10	...	...	...	...	...	...	...	1	13	2	...	3	...	...	1	...	...	...
Kansas City Medical College	...	...	...	...	2	...	...	...	...	...	...	3	...	...	...	59	1	...	...	...	...
Univ. of the State of Missouri Med. Dept.	...	...	...	...	...	...	...	...	...	...	1	3	...	1	2	1	...	2	...	...	1
Med. Dept. Washington University	...	...	12	1	3	...	...	...	...	...	1	74	3	3	5	5	3	2	...	...	...
Homeopathic Medical College of Missouri	...	...	...	...	...	...	...	...	...	...	1	15	2	3	...	13	2	...	...	...	...
Eclectic Medical University	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	28	...	1	...	...	...
University of Nebraska Coll. of Med.	...	...	...	...	2	...	...	...	...	...	...	...	...	...	26	...	...	...	...	...	...
Lincoln Medical College	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	12	1	...	...	...	...
John A. Creighton Medical College	...	...	...	...	1	...	...	...	...	...	...	...	...	1	26	4	...	...	...	...	...
Dartmouth Medical School	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	3	...	18
Union University Albany Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
Cornell University Medical College	2	...	...	...	...	3	...	3	...	...	...	1	...	2	1	...	...	1	1	...	5

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* The total number of students from each state is given at the top of each column.

Michigan.—810	Minnesota.—538	Mississippi.—557	Missouri.—285	Montana.—31	Nebraska.—429	N. H'mpsh'e.—141	New Jersey.—510	New Mexico.—9	New York.—2414	Nevada.—11	N. Carolina.—402	N. Dakota.—98	Ohio.—1289	Oklahoma.—92	Oregon.—153	Pennsyl'nia.—2119	R. Island.—125	S. Carolina.—252	S. Dakota.—94	Tennessee.—627	Texas.—916	Utah.—60	Vermont.—169	Virginia.—615	Washington.—91	W. Virginia.—358	Wisconsin.—678	Wyoming.—19	Canada.—203	Foreign.—345	Total.—27327
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	94
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Jefferson Medical College	1	...	2	4	...	9	14	...	1	3	1	8	...	10	9	2	4	...	8	5	30
Western Pennsylvania Medical College	...	...	...	...	...	...	...	...	...	...	...	4	...	8	...	...	...	...	...	3	...
Temple College Department of Medicine	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	1	...	...	...	...	...
Woman's Medical College of Pennsylvania	...	...	...	...	...	5	2	1	...	...	1	3	...	1	2	3	2	1	2	1	16
Medico-Chirurgical Coll. of Philadelphia	...	...	1	1	...	1	9	...	1	1	...	1	...	...	1	...	5	...	1	2	6
Med. Coll. of the State of South Carolina	...	...	...	...	...	...	...	...	2	1	...	...	...	1	...	...	...	...	...	...	...
Chattanooga National Medical College	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	1	...	...	...	...
Med. Dept. University of Tennessee	8	...	1	...	...	...	...	...	1	...	...	1	3	...	...	...	22	8	...	...	...
Chattanooga Medical College	49	...	7	1	2	...	...	1	2	27	...	3	2	...	2	...	9	2	1	...	...
Meharry Medical College	18	...	23	...	...	2	...	...	17	14	...	6	...	...	...	4	15	13	...	...	...
Memphis Hospital Medical College	31	...	129	...	...	...	...	...	1	7	...	...	18	1	1	1	4	83	...	...	...
Med. Dept. University of the South	16	...	11	...	...	...	...	...	8	16	...	...	...	1	...	...	5	28	...	...	1
Tennessee Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...	...
University of Nashville Medical Department	25	...	22	...	...	...	...	...	4	4	...	3	1	2	...	...	19	33	...	...	...
Vanderbilt University Medical Department	17	...	3	2	...	1	...	...	...	2	...	2	2	...	...	...	12	2	1	...	...
Knoxville Medical College	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	...	...
Medical Department Ft. Worth University	...	...	1	...	...	...	...	...	...	...	...	...	7	...	...	...	1	2	...	...	...
Physio-Medical College of Texas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Department University of Texas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Baylor University Medical College	...	...	...	...	...	...	...	...	...	...	...	1	6	...	...	...	...	3	...	...	...
Dallas Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
University of Vermont Medical Department	...	...	...	...	...	18	1	...	...	...	...	1	...	...	...	...	...	...	9	1	37
University College of Medicine	...	...	...	...	...	...	...	...	4	2	...	...	...	...	...	...	...	...	...	...	1
University of Virginia Dept. of Med.	11	...	...	...	...	1	...	2	2	3	...	...	...	...	...	...	3	6	...	5	1
Medical College of Virginia	...	...	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2
Wisconsin College of Phys. and Surgs.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Milwaukee Medical College	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...

Societies.

Medical Society of Nova Scotia.—The following officers were elected at the recent annual meeting held at Antigonish, July 1 and 2; President, Dr. M. Chisholm, Halifax; vice-presidents, Drs. Henry E. Kendall, Sydney, and Henry K. Macdonald, Lunenburg, and secretary-treasurer, Dr. W. Huntley Macdonald, Antigonish. Halifax was selected as the next place of meeting.

American Microscopical Society.—At the annual meeting held at Winona Lake, July 29, 30 and 31, the following officers were elected: President, Prof. Thomas J. Burrill, University of Illinois; vice-presidents, Prof. H. A. Weber, Columbus, and F. W. Kuhn, Fort Warner; secretaries, Profs. H. B. Ward, and R. H. Walcott, University of Nebraska, and treasurer, J. C. Smith, New Orleans.

Central Wisconsin Medical Society.—At the annual meeting held in Madison, July 28, the following officers were elected: President, Dr. Edward Evans, La Crosse; vice-presidents, Drs. Thomas W. Nuzum, Brodhead, Ledyard V. Lewis, Sun Prairie, William H. Palmer, Janesville, and Charles R. Pickering, Muscoda; censors, Drs. Walter F. McCabe, Beloit, Theodore W. Evans, Madison, J. C. Cutler, Verona, and W. E. L. Froggart, Cross Plains, and Dr. Charles S. Sheldon, Madison, secretary and treasurer.

Maritime Medical Association.—The thirteenth annual meeting was held at St. John, N. B., July 22 and 23, under the presidency of Dr. Murray MacLaren of St. John. Dr. Galen M. Woodcock, Bangor, was present as a representative of the Maine Medical Association. Drs. Maurice Richardson and E. W. Cushing of Boston were present and contributed papers. The following officers were elected: President, Dr. George M. Campbell, Halifax, N. S.; vice-presidents—for Nova Scotia, Dr. William H. Macdonald, Rose Bay; for New Brunswick, Dr. Alban F. Emery, St. John, and for Prince Edward Island, Dr. Alexander MacNeil, Summerside; treasurer, Dr. John Sutherland, Bedeque, Prince Edward Island, and secretary, Dr. T. D. Walker, St. John, N. B.

NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS.

Report of the Committee on Curriculum, made at the Annual Session, held in New Orleans, May 4, 1903.

Dr. George W. Webster, chairman of the committee, president of the Illinois State Board of Health, and professor of physical diagnosis and clinical medicine in Northwestern University Medical School, Chicago, read the following report:

Mr. President and Members of the Confederation:

At the meeting of the confederation last year a Committee on Curriculum was appointed, in accordance with the recommendation of Dr. N. R. Coleman in his presidential address. I had the honor to be made chairman of the committee, and it is only fair to the other members of the committee to state that the following report represents only my own personal work and personal views. I make this statement in order that any criticisms may be directed against me and not against the other members of the committee.

In the interests of a higher and improved standard of medical education, and of interstate reciprocity in licensure, and in order that the degree of M.D. may have a definite meaning, at least an approach to a uniform, fixed value, it is desirable that a minimum standard of requirements for graduation in medicine shall be established and maintained.

Michigan.—810	Minnesota.—538	Mississippi.—557	Missouri.—285	Montana.—31	Nebraska.—429	N. H'mpsh'e.—141	New Jersey.—510	New Mexico.—9	New York.—2414	Nevada.—11	N. Carolina.—402	N. Dakota.—98	Ohio.—1289	Oklahoma.—92	Oregon.—153	Pennsyl'nia.—2119	R. Island.—125	S. Carolina.—252	S. Dakota.—94	Tennessee.—627	Texas.—916	Utah.—60	Vermont.—169	Virginia.—615	Washington.—91	W. Virginia.—358	Wisconsin.—678	Wyoming.—19	Canada.—203	Foreign.—345	Total.—27327
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									[illegible]									...	...	...	...	...	...	...	...	...	...	...	4	1	237
...	...	...	...	...	...	2	16	...	255	...	2	...	...	...	...	...	12	...	...	...	...	...	2	...	...	...	...	...	...	1	290
1	...	...	...	1	...	...	23	...	66	...	...	...	1	...	...	...	1	...	...	...	1	...	...	1	1	...	...	...	1	...	111
...	...	...	...	...	...	1	...	...	129	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	3	140
2	...	1	2	2	1	2	110	...	504	...	5	...	4	...	1	7	13	3	...	2	4	...	4	4	...	1	4	1	3	15	705
...	...	...	...	...	...	...	7	...	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34
...	1	...	2	...	1	4	38	...	180	...	...	...	8	...	1	7	1	...	...	...	3	5	2	...	...	...	...	2	3	9	311
...	...	4	...	...	...	...	2	...	3	...	29	...	...	...	...	10	...	15	...	...	2	...	...	24	...	3	...	...	...	6	113
...	...	1	...	...	...	...	...	...	2	...	76	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	83
...	...	...	...	...	...	...	...	...	...	...	55	...	...	...	...	...	...	4	...	3	...	...	...	2	...	...	...	...	...	1	67
...	...	...	...	...	...	...	...	...	1	...	...	...	70	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	5	86
5	...	...	...	...	...	...	2	...	11	...	...	...	65	...	...	26	1	...	...	...	...	...	...	...	1	1	...	...	...	1	115
1	...	...	4	...	1	...	...	...	6	...	...	...	54	1	...	13	...	...	...	...	7	...	...	...	...	12	...	...	...	...	146
...	...	...	...	...	...	...	...	...	...	...	...	...	127	1	...	1	...	...	...	...	...	...	...	1	...	2	...	...	...	1	170
1	...	...	...	...	...	...	...	...	1	...	...	...	87	...	...	4	...	...	...	...	...	...	...	...	...	1	...	...	...	1	97
...	...	...	...	...	...	...	...	...	...	...	...	...	79	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	106
1	...	...	...	...	...	1	...	...	6	...	...	...	173	...	...	13	...	...	...	...	...	...	...	...	...	4	1	...	...	5	214
...	...	...	...	...	...	...	...	...	1	...	...	...	19	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	30
...	...	...	...	...	...	...	...	...	...	...	...	...	142	...	...	11	...	...	...	...	...	...	...	1	...	6	...	...	...	1	163
1	...	...	...	...	...	...	...	...	...	...	...	...	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	41
...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	61	1	...	...	...	...	...	1	...	...	14	...	...	...	4	1	88
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	40
1	1	...	3	...	1	4	20	...	19	...	...	...	15	...	1	278	4	2	...	4	3	...	2	15	3	6	3	...	...	12	469
...	2	...	...	...	1	1	33	...	10	...	...	...	6	...	...	151	...	...	...	...	...	...	1	1	...	...	...	...	1	3	233
1	3	3	2	1	2	2	63	...	24	...	13	...	24	...	5	470	5	1	1	...	5	2	2	5	...	7	3	...	1	15	771
...	...	...	...	...	...	...	...	...	2	...	...	...	29	...	...	246	...	...	...	...	...	...	...	1	...	19	2	...	2	1	317
...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	59	...	1	...	...	...	...	...	...	...	...	...	...	...	3	70
...	...	2	...	...	...	2	12	...	8	...	1	...	...	...	...	81	...	1	...	1	1	...	1	2	1	1	...	...	2	9	165
...	...	...	...	1	1	...	29	...	10	...	1	1	5	...	1	336	...	...	...	1	...	1	...	...	...	1	...	...	4	9	431
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	91	...	...	...	...	...	...	...	...	...	...	...	...	95
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...	...	7	...	...	...	...	...	...	1	...	5	...	1	...	...	...	...	...	...	64	24	...	...	...	...	1	...	...	...	3	150
...	...	14	1	...	1	...	4	...	2	...	27	1	4	1	...	1	1	3	...	75	6	1	...	3	...	8	1	...	1	1	264
1	...	24	14	...	...	...	...	...	1	...	1	...	4	1	...	2	...	14	...	47	20	...	...	1	...	2	...	...	...	8	252
...	...	197	10	...	...	...	...	...	1	...	1	...	...	6	...	...	...	1	...	88	93	...	...	...	...	1	...	...	...	1	675
...	...	20	...	...	...	...	3	...	3	...	4	...	...	...	...	2	...	6	...	30	26	...	...	15	...	6	...	...	1	1	203
...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	45	1	...	...	2	...	...	...	...	...	...	62
...	...	65	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...	4	1	92	30	...	...	...	...	7	...	...	...	1	317
...	...	22	2	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	69	21	...	...	...	...	1	...	...	...	1	162
...	...	3	1	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	13	...	...	...	...	...	...	...	...	...	...	23
...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	91	...	...	...	...	...	...	...	...	1	108
...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18	...	...	...	...	...	...	...	...	1	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	179	...	...	...	...	...	...	...	...	...	179
...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	54	...	...	...	...	...	...	...	...	...	66
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	21	1	1	49	...	...	...	1	...	...	4	3	...	...	...	...	...	92	...	...	...	...	...	3	3	246
...	...	...	...	...	...	...	2	...	1	...	21	...	1	...	...	1	...	...	...	...	...	...	...	138	...	15	...	...	1	...	187
...	1	2	...	...	...	...	4	...	1	...	8	...	...	...	...	3	...	3	...	3	3	...	...	78	...	11	...	...	...	...	151
1	...	...	...	...	...	...	...	...	6	...	22	...	2	...	...	2	...	5	...	1	1	...	...	151	...	19	...	...	...	4	219
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	102	...	...	...	102
1	3	...	...	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	175	...	...	...	184

One of the inalienable constitutional rights of the state is the establishment of standards and the enforcement of regulations in regard to medical education. It seems to be of vital importance that we establish a minimum standard of work in a medical curriculum, to which all states can agree, or to which at least a majority can agree and then have each board of examiners or state board of health adopt this as its standard, just as the National Educational Association did in standardizing the high school course.

The first question is, how shall this standard be obtained or determined; and second, how secure compliance with its requirements? This will never be accomplished by the colleges themselves, nor will it be done by such associations as the American Medical College Association, the Southern Medical College Association, the American Institute of Homeopathy, or similar organizations.

The colleges are many of them influenced, dominated by financial considerations, the spirit of trade, and the college associations by sectarian bias or dogma, and they lack the authority to establish standards and compel recognition of them or conformity to them. This standard can, in my opinion, be established, maintained, compliance with its requirements enforced, only by the concerted action of the various boards of health and examining boards of the Union.

Heretofore the standards established by the American Medical College Association and other similar organizations, have been an outline or definition of a "medical course" in the most indefinite terms: For example, "four years of six months each, in four separate calendar years." Not a word in regard to the number of hours of work in each month or in each year and no specifications in regard to relative amount of time devoted to each study in the curriculum, the order or sequence in which studies should follow each other in the course, nothing in regard to whether the work should consist of lectures only, or of laboratory work, recitations, lectures, and clinics combined, and especially the relative amount of time devoted to each, especially clinics.

The same is true of the requirements of the state examining boards as a general rule. In many states some of the colleges aim no higher than the compulsory standards established by their respective state boards, and if the latter are indefinite and elastic those of the medical school are equally nebulous and hazy. A glance at the curriculums of the various medical colleges shows the same wide variations, no two being alike, either in total number of hours of instruction, total hours in any one year or the time devoted to any one subject in the curriculum. The total hours vary from 5,000 in some to a little over 2,000 in others. The time devoted to clinical instruction varies from over 2,000 hours in some down to a little over 200 in others. The same is true of every subject in the curriculum. Over 500 hours are devoted to the subject of chemistry in some schools, and less than half as many in others. Anatomy varies from over 1,200 as a maximum to 200 as a minimum. One school devotes over 400 hours to the study of physiology, while another has less than 100. Medicine has over 1,200 hours in one and less than 200 in another. In other schools such important subjects as physical diagnosis, pharmacology, etiology and hygiene are not taught at all.

THE CIRCULAR LETTER.

With a view of ascertaining what is actually being done, rather than asking advice as to what should be done, I sent the following circular letter to each medical college in the United States:

Dear Doctor:—At a meeting of the National Confederation of State Medical Examining and Licensing Boards, held at Saratoga, June 9, 1902, I had the honor to be elected chairman of the executive committee of the general committee on curriculum.

I am sending you this communication to ask your assistance and advice in the preparation of my report, which is to be made to the confederation at New Orleans, May 4, 1903.

I am enclosing a list of studies usually embraced in the curriculum of a medical course. Will you, at your earliest possible convenience, fill out this schedule, giving the number of hours devoted to each of the studies named in the medical school of which you are the secretary? If the studies are not put down in the proper year, please change to correspond with the work of your school.

For the sake of advancement in medical teaching, and as one of the elements for a basis of interstate reciprocity, uniformity in the length and character of the medical course seems desirable. That I may have the benefit of the views of the leading educators in medicine on this very important point, I would respectfully request replies to the following questions:

1. Aside from the teaching in materia medica, practice and therapeutics, is a uniform curriculum in all the medical schools of the United States desirable?
2. Is it possible?
3. If desirable and possible, how, in your opinion, is it to be established?
4. Dividing the work under the following heads: Lectures, recitations, laboratory work, clinics, what relative time should be devoted to each?
5. How many hours of actual work in each college year?
6. Over how many months should this be distributed?
7. Over how many years?
8. Do you favor elective work, and if so, in what branches?
9. Any suggestions as to the work or the report of this committee will be gratefully received.

In addition to the answers to the questions, I requested each secretary or dean to fill out the following blank form which I sent him, showing the number of hours devoted to each study in the entire curriculum, and divided the work into lectures, recitations, laboratory work and clinics, extending over a four-year course.

FIRST YEAR.	CLINICS.	LECTURES.	RECITATIONS.	LABORATORY.
Chemistry.				
Anatomy.				
Histology and Embryology.				
Physiology.				
Pharmacology.				
Physical Diagnosis.				
Surgery.				
Total Hours of Instruction.				
SECOND YEAR.				
Chemistry.				
Anatomy.				
Physiology.				
Pharmacology.				
Bacteriology.				
Etiology and Hygiene.				
Pathology.				
Physical Diagnosis.				
Surgery.				
Medicine.				
Total Hours of Instruction.				
THIRD YEAR.				
Pathology.				
Obstetrics.				
Dermatology and Syphilology.				
Laryngology and Rhinology.				
Pediatrics.				
Surgery.				
Medicine.				
Total Hours of Instruction.				
FOURTH YEAR.				
Obstetrics.				
Ophthalmology and Otology.				
Gynecology.				
Neurology.				
Mental Diseases and Jurisprudence.				
Surgery.				
Medicine.				
Total Hours of Instruction.				
Total Hours of Instruction in Four Years.				

Name of Medical School.

Signature and Address of Secretary of Dean.

I received the courtesy of a reply from about 20 per cent., and gratefully acknowledge the same at this time. The following statistics have been made up from the reports sent in, as far as it was available. In addition to this, the blank forms have been filled in by myself from information taken from the annual announcements of the colleges. More would have been added had it not been for the fact that the announcements are not definite enough and of such a character as to enable me to determine how much time a particular school devotes to any one study, nor the total number of hours of clinics, lectures, recitations or laboratory work in any one year, or in the entire course.

This doubtless accounts for the failure of so many medical schools to answer my letter or fill out the blank forms.

Every effort has been made to have these statistics as reliable as possible. In compiling these statistics many errors have doubtless crept in, and for any such I offer sincere apologies at this time and will very gratefully acknowledge any corrections which may be sent me. It is my purpose to continue this work and to secure this information from every school in the United States and to present a complete report next year.

Some of the statistics furnished this year had to be discarded because of their very evident unreliability. For example, one school gave as the grand total of hours of instruction in the four years over 25,000. This would make over 30 hours a day, including Sundays and holidays.

From these statistics I have constructed the following tables: First, a table showing the total number of hours of work in each of the four years of the medical course, and the grand total of hours in the entire four-year course. The sum of the latter, divided by the number of schools, gives the average number of hours of instruction in these 43 medical schools. (See Table 4.)

A second table gives the number of hours devoted to each study in each of said schools. The total number of hours devoted to any one branch in all the schools divided by the number of colleges gives us the average number of hours devoted to that particular subject. (See Table 4.)

A third table shows the relative number of hours devoted to clinical instruction.

Finally, a fourth table has been constructed which sums up all the foregoing and condenses it into what might be termed an average curriculum which might be adopted and then required as a minimum standard by the various examining boards.

Against this average curriculum it might be urged that it does not represent the average of work done in all the medical colleges of the United States. This is true, but it does represent the work of those schools from which at least half of the graduates come each year. For example, there were about 5,000 graduates in 1902. The graduates from the colleges in this list made up about 2,500 of that total.

ANSWERS TO QUESTIONS.

Question 1.—Yes, 19; no, 6; doubtful, 1.

Question 2.—Yes, 7; no, 8; doubtful, 10.

Question 3.—"The development of interstate reciprocity will help materially in this direction, as will also the perfected organization of the American Medical Association."—Dr. L. M. Crafts, Hamline University, College of Physicians and Surgeons.

"In my opinion there has to be a different standard in different schools; and it seems to me a Utopian idea to expect that all the medical schools in the country should be based on a uniform curriculum, any more than the various colleges or academies."—C. M. Green, Harvard University.

"Attempts to secure uniformity should only be by frequent conferences of the schools where the matter may be considered on broad and catholic grounds; certainly not by compulsion of the weaker by the stronger, nor by state boards or legislation." —S. Egbert, Medico-Chirurgical College.

"I should be inclined to say that such a condition is impossible of attainment in view of the widely different circumstances surrounding different schools and also because of the widely divergent opinions held by different teachers."—J. C. Oliver, Miami Medical College.

"It should be possible and ought to be regulated by the appointment of a special committee who should determine first the number of years required to cover the course, etc."—G. M. Kober, Georgetown University.

"If established at all it must be by an understanding between state boards of medical examiners and the various medical institutions."—G. H. Price, Vanderbilt University Medical Department.

"The varying conditions that exist in the different medical schools as to the number of students, facilities for laboratory and clinical instruction, and endowment would render such a plan undesirable and impossible."—C. H. Frazier, University of Pennsylvania.

Many no answers at all. A number simply say state board associations.

Question 4.—"It seems to be the tendency of the times to diminish the number of lectures and increase the laboratory work and clinics, recitations being retained as hitherto."—C. M. Green, Harvard University.

Eight no replies. On an average the balance suggest the work given thus: Laboratory, clinics, lectures, recitations, about one-fourth to each.

Question 5.—Average of those giving hours, 1,059.

Question 6.—Average of replies, eight months.

Question 7.—Average of replies, four years.

Question 8.—Yes, 13; no, 10; no replies, 3; most replies "yes" were for specialties.

Question 9.—No suggestions were made.

CONCLUSIONS AS TO QUERIES MADE.

1. At present there is a disgraceful lack of uniformity in the medical curriculum of the medical colleges of the United States.

2. Comparative uniformity in the medical curriculum is desirable in the interests of higher medical education and of interstate reciprocity.

3. It is possible. It can be accomplished by this confederation by adopting a minimum standard and then having this standard adopted by each of the state boards of health or examing and licensing boards.

4. This standard curriculum, which is to be adopted as a minimum requirement for the degree of M.D., should consist of not less than 3,600 hours, divided nearly equally between the four years.

5. The course should consist of four terms in four separate calendar years.

6. There should be at least 900 hours of actual work, or 30 weeks and 30 hours in each week aside from holidays.

7. Clinical work should constitute at least one-fourth of the entire work of the four-year course.

8. The average time devoted to each subject in the curriculum should be approximately that presented in volume two of the advised standard.

9. There should be a minimum standard of required work. If elective work is permitted it should be in addition to the required work.

10. The above is recommended with a full realization of the fact that the value of a college course lies not so much in the facts learned as in the way in which they are learned, the view point obtained, the atmosphere created and that the atmosphere is made, not so much by the dead subjects of its curriculum, but by the living personality of its professors.

It was a realization of this that let a former president of the United States remark that "Mark Hopkins at one end of a log and himself at the other was university enough for him."

In medical education there should be unity of direction, at least comparative uniformity of standards, and the most intelligent methods should prevail.

The ideal curriculum not only compels men to think, but fits them to act, which teaches not only facts, but inculcates correct methods.

Geo. W. Webster, Chairman.
Aug. Korndoerfer.
J. C. Webster.

TABLE 1.

Name of School.	Clinics.	Lectures.	Quizzes.	Laboratory.	Total Hours in Each Year.	Total Hours in the Entire Medical Course.
c—MEDICO-CHIRURGICAL COLLEGE.						
First year	....	640	....	608	1,248	
Second year	....	544	....	896	1,440	
Third year	720	722	....	....	1,442	
Fourth year	640	576	....	256	1,472	5,602
s—UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE.						
First year	....	304	160	880	1,344	
Second year	32	480	320	800	1,632	
Third year	254	616	240	412	1,522	
Fourth year	502	....	64	448	1,014	5,512
c—UNIVERSITY OF MINNESOTA, DEPARTMENT OF MEDICINE.						
First year	....	340	136	288	764	
Second year	....	356	170	478	1,004	
Third year	703	512	34	315	1,564	
Fourth year	1,555	386	....	....	1,941	5,273
s—WESTERN RESERVE UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	281	....	1,117	1,398	
Second year	....	426	....	748	1,174	
Third year	423	727	....	208	1,358	
Fourth year	782	268	....	....	1,150	5,080
s—NORTHWESTERN UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	330	....	830	1,160	
Second year	32	400	....	686	1,118	
Third year	988	336	....	72	1,396	
Fourth year	1,044	272	....	24	1,340	5,014
s—WESTERN PENNSYLVANIA UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	576	....	540	1,116	
Second year	96	672	....	338	1,104	
Third year	64	736	....	188	1,564	
Fourth year	704	476	....	....	1,180	4,964
s—JEFFERSON MEDICAL COLLEGE.						
First year	....	268	208	620	1,096	
Second year	180	405	75	372	1,032	
Third year	300	360	135	249	1,044	
Fourth year	592	299	390	386	1,667	4,839
s—UNIVERSITY OF MICHIGAN, MEDICAL DEPARTMENT.						
First year	....	480	....	720	1,200	
Second year	....	384	....	720	1,104	
Third year	256	416	....	642	1,314	
Fourth year	608	560	....	....	1,168	4,786
s—COLORADO SCHOOL OF MEDICINE.						
First year	....	402	....	691	1,093	
Second year	....	600	....	703	1,303	
Third year	414	....	....	515	929	
Fourth year	680	....	....	779	1,459	4,784
s—CLEVELAND COLLEGE OF PHYSICIANS AND SURGEONS.						
First year	....	362	....	556	918	
Second year	....	512	....	704	1,216	
Third year	976	352	....	128	1,456	
Fourth year	840	304	....	....	1,144	4,734
s—COLLEGE OF PHYSICIANS AND SURGEONS, SAN FRANCISCO.						
First year	....	329	92	451	872	
Second year	....	496	220	499	1,215	
Third year	452	442	204	70	1,166	
Fourth year	514	480	240	144	1,378	4,631
s—COOPER MEDICAL COLLEGE.						
First year	....	256	....	1,000	1,256	
Second year	....	288	....	560	848	
Third year	384	542	32	128	1,086	
Fourth year	816	382	64	176	1,438	4,628
s—ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.						
First year	75	502	....	400	977	
Second year	90	759	....	463	1,312	
Third year	210	545	....	148	903	
Fourth year	72	759	....	....	1,357	4,549
c—JOHNS HOPKINS UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	136	156	504	796	
Second year	20	104	32	856	1,012	
Third year	432	426	64	212	1,134	
Fourth year	1,152	278	128	32	1,590	4,532
s—ATLANTA COLLEGE OF PHYSICIANS AND SURGEONS.						
First year	....	286	234	520	1,040	
Second year	....	328	260	910	1,408	
Third year	260	364	182	260	1,066	
Fourth year	338	416	156	....	910	4,424
s—CORNELL UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	169	249	574	992	
Second year	....	233	351	728	1,312	
Third year	432	139	289	300	1,160	
Fourth year	560	137	170	....	867	4,331

TABLE 1.—*Continued.*

Name of School.	Clinics.	Lectures.	Quizzes.	Laboratory.	Total Hours in Each Year.	Total Hours in the Entire Medical Course.
s—UNIVERSITY OF TEXAS, MEDICAL DEPARTMENT.						
First year	....	252	56	502	810	
Second year	....	270	56	690	1,016	
Third year	294	346	56	424	1,120	
Fourth year	728	420	56	168	1,372	4,318
c—UNIVERSITY OF CALIFORNIA, MEDICAL DEPARTMENT.						
First year	....	1,008	....	252	1,260	
Second year	....	162	....	1,082	1,244	
Third year	252	324	....	576	1,152	
Fourth year	414	80	....	144	638	4,294
s—HAMLINE UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	352	124	400	876	
Second year	....	407	135	458	1,000	
Third year	342	515	182	....	1,039	
Fourth year	667	543	148	....	1,358	4,273
c—UNIVERSITY OF IOWA, MEDICAL DEPARTMENT.						
First year	....	441	36	396	873	
Second year	....	339	171	312	822	
Third year	252	646	167	189	1,255	
Fourth year	534	582	90	....	1,206	4,156
c—DETROIT COLLEGE OF MEDICINE.						
First year	192	480	....	384	1,056	
Second year	192	512	....	432	1,136	
Third year	256	528	....	192	976	
Fourth year	256	576	....	48	880	4,048
c—COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO.						
First year	60	420	....	575	1,005	
Second year	60	435	....	510	1,005	
Third year	90	225	390	60	765	
Fourth year	750	475	....	....	1,225	4,005
s—VANDERBILT UNIVERSITY, NASHVILLE, TENN.						
First year	....	312	104	520	936	
Second year	....	312	78	416	806	
Third year	260	416	156	156	988	
Fourth year	286	468	130	312	1,196	3,926
c—MEDICAL SCHOOL OF HARVARD UNIVERSITY.						
First year	....	308	36	846	1,190	
Second year	56	458	....	540	1,064	
Third year	538	304	104	....	946	
Fourth year	449	185	....	....	634	3,824
s—WISCONSIN COLLEGE OF PHYSICIANS AND SURGEONS.						
First year	....	150	210	432	792	
Second year	....	294	270	540	1,104	
Third year	332	165	285	30	812	
Fourth year	594	480	....	....	1,074	3,782
c—UNIVERSITY MEDICAL COLLEGE.						
First year	....	504	....	400	904	
Second year	....	630	....	436	1,086	
Third year	....	588	....	56	644	
Fourth year	532	588	....	....	1,120	3,754
c—UNIVERSITY OF BUFFALO, MEDICAL DEPARTMENT.						
First year	32	538	....	304	874	
Second year	....	688	....	268	956	
Third year	32	534	....	352	918	
Fourth year	694	250	....	32	916	3,724
s—UNIVERSITY OF LOUISVILLE, MEDICAL DEPARTMENT.						
First year	....	312	312	314	938	
Second year	....	312	286	236	834	
Third year	234	442	130	234	1,040	
Fourth year	300	436	104	72	912	3,724
s—GEORGETOWN UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	419	31	356	806	
Second year	....	363	31	396	790	
Third year	426	495	....	111	1,032	
Fourth year	490	478	....	63	1,031	3,659
c—MARION-SIMS MEDICAL COLLEGE.						
First year	....	294	126	372	792	
Second year	....	322	308	288	918	
Third year	112	476	....	112	700	
Fourth year	448	644	98	56	1,246	3,656
s—PULTE MEDICAL COLLEGE.						
First year	84	308	28	288	708	
Second year	112	196	56	530	902	
Third year	448	476	28	56	1,008	
Fourth year	416	522	28	42	1,008	3,626
s—UNIVERSITY COLLEGE OF MEDICINE, VIRGINIA.						
First year	....	251	115	351	817	
Second year	....	242	110	256	608	
Third year	241	444	203	....	888	
Fourth year	269	457	190	14	930	3,243
s—DARTMOUTH MEDICAL COLLEGE.						
First year	....	51	130	559	740	
Second year	....	....	134	670	804	
Third year	90	300	307	116	813	
Fourth year	140	361	324	....	825	3,182
c—DENVER AND GROSS MEDICAL COLLEGE.						
First year	....	384	50	217	651	
Second year	....	432	10	281	723	
Third year	260	480	....	80	820	
Fourth year	384	576	....	....	960	3,154
s—COLUMBIAN UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	195	135	426	756	
Second year	....	285	225	252	762	
Third year	378	248	105	120	851	
Fourth year	372	171	30	164	737	3,106
s—MIAMI MEDICAL COLLEGE.						
First year	....	196	168	470	834	
Second year	....	312	84	452	848	
Third year	224	364	84	....	672	
Fourth year	300	296	28	44	668	3,022
s—FORT WORTH UNIVERSITY, MEDICAL DEPARTMENT.						
First year	....	218	182	264	664	
Second year	....	222	104	478	804	
Third year	286	390	....	96	772	
Fourth year	286	366	....	....	652	2,892
c—KEOKUK MEDICAL COLLEGE.						
First year	....	334	140	295	769	
Second year	....	470	168	135	773	
Third year	....	504	112	75	691	
Fourth year	....	420	196	....	616	2,849
s—UNIVERSITY OF PENNSYLVANIA, MEDICAL DEPARTMENT.						
First year	....	267	....	737	804	
Second year	....	288	....	122	410	
Third year	192	224	268	118	802	
Fourth year	346	175	182	12	715	2,731
s—CENTRAL MEDICAL COLLEGE, ST. JOSEPH.						
First year	....	536	....	130	666	
Second year	104	546	....	104	754	
Third year	104	442	....	....	546	
Fourth year	130	468	....	....	598	2,564
s—UNIVERSITY OF VIRGINIA, MEDICAL DEPARTMENT.						
First year	....	370	66	150	586	
Second year	200	485	38	93	816	
Third year	....	285	30	25	340	
Fourth year	120	252	15	10	397	2,139

EXPLANATIONS OF TABLES 1 AND 2.

c Before the names of colleges means report taken from catalogue.

s Before the names of colleges means report taken from replies by secretaries.

x In the column giving the general average in any one subject means the subject is taught but included in some other subject.

o In the column giving the general average in any one subject means the subject is not taught at all.

SUMMARY OF TABLE 1.

TOTAL NUMBER OF HOURS DEVOTED TO THE MEDICAL COURSE IN THE FOLLOWING SCHOOLS.

Name of School.	Hours.
Medico-Chirurgical College	5,602
University and Bellevue Hospital Medical College	5,512
University of Minnesota, Medical Department	5,273
Western Reserve University, Medical Department	5,080
Northwestern University, Medical Department	5,014
Western Pennsylvania, Medical Department	4,964
Jefferson Medical College	4,839
University of Michigan, Medical Department	4,786
Colorado School of Medicine, University of Colorado	4,784
Cleveland College of Physicians and Surgeons	4,734
College of Physicians and Surgeons, San Francisco	4,631
Cooper Medical College	4,628
St. Louis College of Physicians and Surgeons	4,549
Johns Hopkins University, Medical Department	4,532
Atlanta College of Physicians and Surgeons	4,424
Cornell University, Medical Department	4,331
University of Texas, Medical Department	4,318
University of California, Medical Department	4,294
Hamline University, College of Physicians and Surgeons	4,273
University of Iowa, Medical Department	4,156
Detroit Medical College	4,048
College of Physicians and Surgeons, Chicago	4,005
Vanderbilt University, Medical Department	3,926
Harvard University, Medical Department	3,824
Wisconsin College of Physicians and Surgeons	3,782
University Medical College, Kansas	3,754
University of Buffalo, Medical Department	3,724
University of Louisville, Medical Department	3,724
Georgetown University, Medical Department	3,659
Marion-Sims Medical College	3,656
Pulte Medical College	3,626
University College of Medicine, Virginia	3,243
Dartmouth Medical College	3,182
Denver and Gross Medical College	3,154
Columbian University, Medical Department	3,106
Miami Medical College	3,022
Fort Worth University, Medical Department	2,892
Keokuk Medical College	2,849
University of Pennsylvania, Medical Department	2,731
Central Medical College, St. Joseph, Mo.	2,564
University of Virginia, Medical Department	2,139

TABLE 2.

Name of School.	Chemistry.	Anatomy.	Histology and Embryology.	Physiology.	Pharmacology.	Physical Diagnosis.	Surgery.	Bacteriology.	Etiology and Hygiene.	Pathology.	Medicine.	Obstetrics.	Dermatology and Syphilology.	Laryngology and Rhinology.	Pediatrics.	Ophthalmology and Otology.	Gynecology.	Neurology.	Mental Dis. and Jurisprudence.
c Medico-Chirurgical College....	384	896	96	288	256	112	930	192	192	384	544	352	112	64	96	192	160	96	32
s Univ. and Bellevue Hosp. Coll.	576	1248	160	320	352	96	892	64	o	400	816	160	*x*	*x*	48	112	208	56	32
c Univ. of Minnesota, Med. Dept.	390	438	450	374	204	*o*	621	176	*x*	327	1020	128	140	138	156	218	242	208	*x*
s West. Reserve Univ., Med. Dept.	350	1068	353	420	372	105	549	117	70	402	140	67	67	75	35	75	120	77	23
s Northwest. Univ., Med. Dept..	490	624	232	236	168	112	1064	176	32	240	536	160	112	96	96	176	320	112	32
s West. Penn. Univ., Med. Dept.	256	436	320	352	544	64	1168	192	o	242	1232	160	o	*o*	32	44	32	*o*	48
s Jefferson Medical College.....	271	612	252	204	236	44	1001	o	45	411	638	216	128	98	98	178	233	136	128
s Univ. of Michigan, Med. Dept.	568	568	276	308	128	*o*	560	228	48	199	412	132	96	36	*o*	160	224	160	48
s Colorado School of Medicine..	340	542	288	380	282	*o*	364	235	36	320	690	180	72	72	108	356	252	216	18
s Cleveland Coll. of P. and S..	320	576	214	384	96	96	788	192	36	320	820	76	60	96	224	92	96	96	92
s Coll. of P. & S., San Francisco	306	596	65	450	60	30	684	60	*o*	484	684	246	72	72	72	168	180	36	48
s Cooper Medical College......	384	648	416	256	192	64	864	45	32	330	608	160	32	32	124	176	96	96	64
s St. Louis Coll. of P. and S...	412	503	105	434	275	165	661	50	80	150	435	220	90	108	130	143	152	112	*x*
c Johns Hopkins Med. School..	240	796	90	212	184	32	580	128	*x*	368	640	416	104	104	104	104	308	188	*x*
s Atlanta College of P. and S.	390	884	274	156	o	o	546	364	o	624	432	234	26	78	*o*	130	104	52	o
s Cornell Univ. Med. College...	392	748	380	248	342	o	569	96	24	448	350	297	25	33	83	53	*o*	72	15
s Univ. of Texas, Med. Dept...	336	560	169	294	196	28	692	90	136	504	524	140	28	168	112	*x*	182	56	28
c Univ. of California, Med. Dept.	180	936	324	378	108	108	712	216	*o*	504	774	144	72	72	108	o	126	*o*	*o*
s Hamline Univ., Med. Dept....	390	438	450	374	201	*o*	64	176	*x*	54	1020	128	114	74	74	107	307	74	42
c Univ. of Iowa, Med. Dept....	360	459	117	303	306	24	743	166	*x*	282	612	114	36	180	12	108	144	24	*x*
c Detroit Medical College......	448	480	224	288	258	64	752	240	*x*	208	640	128	32	32	32	64	32	96	*x*
c College of P. and S., Chicago.	420	540	245	270	225	45	750	150	*x*	390	555	120	150	120	60	60	180	60	30
s Vanderbilt Univ., Med. Dept..	286	728	130	156	260	104	720	104	26	156	468	156	26	78	52	104	312	20	26
c Harvard Univ., Med. Dept...	390	526	188	360	64	36	531	208	*x*	336	564	132	92	28	104	68	38	112	*x*
s Wisconsin College of P. and S.	540	354	270	180	165	15	465	132	45	330	347	120	75	45	105	180	180	90	54
c Univ. Med. Coll., Kansas City.	392	492	252	96	154	56	672	168	*x*	168	364	112	56	56	56	84	168	84	*x*
c Univ. of Buffalo, Med. Dept..	336	438	176	320	256	32	354	96	32	512	572	320	44	96	32	74	160	96	16
s Univ. of Louisville, Med. Dept	468	524	260	338	260	78	518	104	52	*x*	332	208	78	26	104	104	156	52	52
s Georgetown Univ. Schl. of Med.	368	464	182	210	263	31	561	102	68	314	424	248	12	68	*o*	48	88	23	51
c Marion-Sims Medical College.	280	478	324	196	168	56	504	112	*x*	308	518	224	84	56	70	112	84	112	*x*
s Pulte Med. College, Cincinnati	216	468	114	184	252	112	690	72	*o*	240	606	188	56	28	56	84	56	70	42
s Univ. College of Med., Virginia	280	460	222	*o*	95	40	431	108	30	141	322	216	121	13	105	121	162	123	27
s Dartmouth Medical School...	366	441	204	309	246	*o*	444	54	o	203	262	224	*o*	o	87	54	181	*o*	24
c Denver and Gross Med. Coll..	288	262	192	232	224	*o*	532	112	*x*	224	596	196	64	64	32	64	96	28	*x*
s Columbian Univ., Med. Dept..	285	651	90	210	180	o	621	42	*x*	138	364	184	40	40	40	52	100	82	*o*
s Miami Medical College......	632	454	70	168	56	*o*	356	96	30	212	428	168	64	74	*o*	142	88	64	*x*
s Ft. Worth Univ., Med. Dept..	312	490	172	104	182	104	282	146	26	136	208	208	104	156	104	*o*	52	52	14
c Keokuk Medical College......	324	344	187	224	274	56	420	141	*x*	103	224	112	56	28	56	56	56	112	*x*
s Univ. of Penn., Med. Dept...	272	434	192	416	x	48	409	90	32	256	291	150	32	16	16	112	86	80	32
s Central Medical College......	176	286	130	156	156	52	468	78	52	78	416	130	*o*	*o*	52	52	104	26	26
s Univ. of Virginia, Med. Dept.	209	200	125	170	105	70	235	25	o	155	495	145	10	15	25	22	60	25	11

TABLE 3.

RELATIVE TIME DEVOTED TO CLINICAL WORK IN THE FOLLOWING SCHOOLS.

Name of School.	Hours.
Northwestern University, Medical Department	2,064
Cleveland College of Physicians and Surgeons	1,816
Johns Hopkins University, Medical Department	1,604
Western Pennsylvania University, Medical Department	1,440
Medico-Chirurgical College	1,360
Cooper Medical College	1,200
Western Reserve University, Medical Department	1,205
Colorado School of Medicine	1,094
Jefferson Medical College	1,072
Pulte Medical College	1,060
Harvard University, Medical Department	1,043
University of Texas, Medical Department	1,022
Hamline University, Medical Department	1,009
Cornell University, Medical Department	992
College of Physicians and Surgeons, San Francisco	966
College of Physicians and Surgeons, Chicago	960
Wisconsin College of Physicians and Surgeons	926
Georgetown University, Medical Department	916
Detroit College of Medicine and Surgery	896
University of Michigan, Medical Department	864
University and Bellevue Hospital Medical College	788
University of Iowa, Medical Department	786
University of Buffalo, Medical Department	758
Columbian University, Medical Department	750
University of California, Medical Department	666
Denver and Gross Medical College	644
Atlanta College of Physicians and Surgeons	598
Fort Worth University, Medical Department	572
Marion-Sims Medical College	560
Vanderbilt University, Medical Department	546
University of Pennsylvania, Medical Department	538
University of Louisville, Medical Department	534
University Medical College	532
Miami Medical College	524
University College of Medicine	510
St. Louis College of Physicians and Surgeons	447
Central Medical College, St. Joseph, Mo	338
University of Virginia, Medical Department	320
Dartmouth Medical College	230
Keokuk Medical College	*

* Can not determine.

The following is an average of the work done in the 43 colleges named. Deduct 10 per cent. and we have the course which is recommended:

TABLE 4.

	Average Course.	Proposed Standard.
Average total hours in 41 colleges in four-year course	4,095	3,600
Average total hours in 41 colleges in:		
First year	973	900
Second year	1,039	900
Third year	1,040	900
Fourth year	1,090	900
Average hours in 43 colleges devoted to the following subjects:		
Chemistry	375	340
Anatomy	549	500
Histology and embryology	219	200
Physiology	276	250
Pharmacology and therapeutics	118	110
Physical diagnosis	61	55
Surgery	596	540
Bacteriology	131	115
Etiology and hygiene	33	30
Pathology	295	260
Medicine	544	500
Obstetrics	177	150
Dermatology and syphilology	64	50
Laryngology and rhinology	67	55
Pediatrics	72	60
Ophthalmology and Otology	106	95
Gynecology	145	130
Neurology	82	75
Mental diseases and jurisprudence	27	25

Owing to the limited space and the cost of publication, 67 pages of statistics have been omitted.

BRITISH MEDICAL ASSOCIATION.

The Seventy-first Annual Meeting, held at Swansea, July 28, 1903.

(*By our Special Representative.*)

Swansea, Wales, July 31, 1903.

Swansea is a busy and picturesque town of about 94,000 inhabitants. It is the chief seat of the tin-plate trade of England, and is considered to be the most important copper smelting center in the world. This was the second visit of the association to Swansea, the former visit being about the middle of the last century, when the association was still young.

and the medical profession of Great Britain occupied a very different position from what it does now. The progress of the association has been extraordinary, its membership having increased from 1,500 at its first meeting in Swansea to no less than 19,000 at the present time.

Accommodations.

Although only 550 members approximately had registered up to noon of the third day of the meeting, at all of the leading hotels in the town the accommodation for visitors was taxed to the utmost. Owing to the scant accommodations some of the members and guests had to rough it. The small attendance was attributed in some measure to the inaccessibility of Swansea as a place of meeting.

Arrangements.

The arrangements made by the local committee for the reception of the visitors and for their interest and entertainment while in Swansea were admirable. There were receptions, garden parties, excursions, golf and cricket matches galore. There was sufficient variety of entertainment to please the most fastidious.

The meetings of the council, the general and representative meetings were so arranged as not to conflict with the scientific work of the association. The hours assigned for the meetings of all of the sections were from 11 a. m. to 1 p. m. each day.

The Church Service.

The members of the association attended the parish church on Tuesday morning attired in their academic robes. The congregation was very large and included the mayor and town clerk of Swansea and the new president and retiring president of the association. The Rev. Thomas Morris intoned the service, and the vicar, the Rev. Talbot Rice, read the lesson. The Bishop of St. David's preached from the text, "Christ Also Suffered." The bishop pointed to the appropriateness of the attitude of the association in thus seeking divine guidance and inspiration from the Great Physician, who had hallowed for all time the ministry of healing. After referring to the part that suffering played in the affairs of human life the bishop said that the gratitude of mankind was deeply due to medical science for the discoveries made to reduce human suffering, but pointed to the fact that against the beneficent reduction of pain were to be set the glaring growth of social contrasts and the keener sensitiveness to suffering which attended the progress of modern civilization. It was, however. a healthy sign of the times that statesmanship now recognized more and more the agency of promoting the welfare of the people. In conclusion he reminded his hearers of the constant inspiration to be found in the recollection that Christ. who also suffered, ever associated Himself with suffering humanity.

The President's Address.

The president's address on the evolution of antiseptic surgery and its influence on the progress and advancement of bacteriology and therapeutics was interesting, brilliant and scholarly. He drew a striking picture of the wards and operating theater of a hospital at the time when he and many of his audience were students in the fifties and sixties; when wards were filled indiscriminately with disease and injuries of all kinds; when blood poisoning, erysipelas and suppuration were rife; when absorbent cotton wool was unknown, and the same sets of ward sponges were used for all cases alike. Under such circumstances the mortality of major operations was as high as 33 per cent., whereas now, he said, it is reduced to about 3 per cent., while that from minor operations is practically *nil*. This transformation was due to the evolution of surgery under the influence of Listerism.

The peroration of his entertaining address was unusually good. He said:

> The object of the British Medical Association is to secure concord and fraternity, unity and strength; power to organize and advance knowledge; power to protect our own interests and uphold the honor and noble traditions of the profession; power to promote and keep a jealous watch over the well-being of the community, and to educate them on all matters relating to health, both of mind and body; and, finally, power to influence and guide parliament in legislating for the health of the nation. The possibilities of the association are great; its influence, which is increasing year after year, will last as a living power in the country, and remain a valuable legacy for the benefit of posterity.
>
> Although our profession is not a lucrative one, it is honorable and heaven-born, and we may have the satisfaction of knowing that we are doing noble and Christian work in our effort to cure disease and alleviate human suffering. Moreover, we may claim that we live and labor to procure for the whole civilized world Nature's choicest blessing—health.

The addresses on medicine and surgery were likewise brilliant and scholarly, full abstracts of which will be given in The Journal.

The Sections.

Owing to the small registration the attendance in the various sections was slim. For instance, in the surgical section, during the reading of an important and interesting paper by Mr. Makins on intestinal anastomosis, there were only 45 present. Contrast this small number with the five or six hundred members in attendance on the Section on Surgery and Anatomy of the American Medical Association at New Orleans and one will find food for reflection. Again, in the section on laryngology and otology, when no less an authority than Professor Glück of Berlin was demonstrating a case of laryngectomy, after presenting an exhaustive paper on this subject, there were only 25 present. There were only 35 members present in the section on obstetrics and gynecology when an interesting discussion was going on relative to fibroid tumors complicating pregnancy.

Discussions Not Reported Stenographically.

The discussions on papers read before the sections are not reported by shorthand writers, as is the custom at the annual sessions of the American Medical Association, but each discusser is furnished with a writing pad immediately at the close of his remarks by one of the secretaries. On each pad is printed the following: "Please write out your speech before leaving and hand it to the honorary secretary of the section Please write name and number on each slip distinctly." As it takes considerable time to write out the remarks of a five or ten-minute speech, the secretaries are kept busy supplying the different speakers with writing pads and collecting them. Sometimes from four to six pads are in use at the same time. This method does not seem to curtail discussion in the least. The speakers willingly and cheerfully, apparently, write out what they have said; but there was a vast difference between the written speech and the spoken one, as we had occasion to observe by comparison. Interesting points that were brought out in the spoken speech were omitted from the written one. It is said that the British Medical Association has never tried to have its scientific discussions reported stenographically at these meetings on account of the great scarcity of competent medical stenographers in England, hence its adherence to the present method.

Excitement in the General Meeting.

The general meetings of the association, like those of the American Medical Association in former years under the old plan, are not as serene as they might be. Dr. E. W. Skerritt, Bristol, treasurer of the association, having submitted the financial statement, Dr. B. Bell, Glasgow, offered some piquant criticism thereon. He wanted more information as to how the money was spent. As it was, the members were asked to pass the accounts without knowing where the money went, and he said something should be done to remedy this unbusinesslike state of affairs. The *British Medical Journal* was conducting a large business, and the business ought to be conducted by business men and not merely by members of the council. He believed a great deal of money was spent that might be saved, and considered that the manner in which the journal was conducted was simple disgraceful. Apropos of the latter remark there were emphatic protestations and cries of "No, no." The speaker proceeded to move a set of resolutions aiming at reform, but was squelched with interruptions.

A representative defended the commercial ability of the members of the council. The accounts, he said, were published in detail in the journal, and if the members read the journal some of them would not have such extraordinary notions. Another member said he was instructed by his division not to criticise the profit and loss account, but to ask for more details in the future.

The president regarded the questions raised by the members as childish, to which remark there was a chorus of very emphatic noes. The treasurer having replied to some of the points raised in a very satisfactory manner, the financial statement was adopted.

Absence of a Conspicuous Figure.

Last year, owing to ill health, Mr. Francis Fowke, after thirty-one years' faithful service as general secretary, tendered his resignation. This was accepted with general regret. and the association elected him an honorary member. During Mr. Fowke's term of office he guided the affairs of the association with conspicuous ability. When appointed he found the finances in a far from satisfactory condition, but by his close attention to every department he was able to change this condition of uncertainty to one of great stability. He watched the numbers of the association increase from about 5,000 to close on to 19,000, and helped to start branches in India Australia, Canada, Africa and other parts of the British Empire beyond the seas.

The council has appointed Mr. Guy Elliston general secretary, who has been associated with Mr. Fowke for upward of three years. It is believed that he will prove a worthy successor in this important office.

Organizer Appointed.

The association, in recognizing the great importance of thoroughly organizing the medical profession throughout the British Empire, has appointed Mr. J. Smith Whitaker organizing secretary, to take charge of the business of the medico-political organizing and ethical committees.

(To be continued.)

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Minutes of the Thirteenth Annual Meeting, held at New Orleans, May 4, 1903.

(Concluded from p. 386.)

For National Uniformity of Curricula.

Dr. Geo. M. Kober, Washington, moved that the special committee on by-laws, consisting of Drs. Ritchie, Dodson and Wathen, be continued, and that this committee be instructed to present some method at the next meeting for unifying the teaching in medical colleges.

Carried.

Appreciation of the President's Address.

Dr. J. W. Holland reported for the committee on president's address, as follows:

"We desire to express a very high appreciation of the valuable suggestions made by the president, and to recommend that a vote of thanks be extended to him by the Association. Further, that the address be printed, and that the suggestions contained therein, and which have not already been adopted, be referred to the committee on by-laws with a view to considering and presenting these matters at the proper time."

[Signed.] H. O. Walker.
J. W. Holland,
H. B. Ward.

On motion the report was accepted, and a vote of thanks extended to Dr. Rodman.

The Officers Elected.

The nominating committee then reported as follows: President, J. R. Guthrie, Dubuque, Ia.; first vice-president, Geo. M. Kober, Washington, D.C.; second vice-president, J. C. Oliver, Cincinnati; secretary-treasurer, Fred. C. Zapffe, 1764 Lexington street, Chicago; judicial council, John M. Dodson, Chicago; Randolph Winslow, Baltimore, H. B. Ward, Lincoln, Neb., J. W. Holland, Philadelphia. On motion the report was adopted, and the secretary instructed to cast the ballot, which he did.

Dr. P. Richard Taylor moved that the amendments as adopted be printed and mailed to the members of the Association within thirty days. Carried.

The suggestion in the secretary's report with reference to appointing a committee of three to assist the secretary in furthering the enrollment in the Association of colleges not now members of the Association, was referred to the committee on by-laws.

The Association then adjourned.

Wm. L. Rodman, President.
Winfield S. Hall, Secretary.

The following arguments were submitted, but on account of lack of time were read by title.

Symposium: To What Extent and How Rapidly Shall Our Standards of Admission to Medical Schools Be Advanced?

BY PARKS RITCHIE, DEAN COLLEGE OF MEDICINE AND SURGERY, UNIVERSITY OF MINNESOTA, MINNEAPOLIS.

The ostensible purpose in the organization of this Association was the advancement of medical education. We have met year after year and resolving ourselves into a mutual admiration society have enjoyed a pleasant social reunion. We have heard many admirable papers on the theory of higher medical education, and have indulged in delightful utopian dreams of the possibilities of the future ideal medical school. We have formulated rules for our guidance, and when a school has been convicted of flagrant violation, a *mild* reproof has been *firmly* administered!

Three years ago we made an apparent step forward, but by the wholly unauthorized and grossly unjustifiable action of the former secretary, and the chairman of the judicial council, the will of the Association was nullified.

The time has come for "the parting of the ways." Either we have fulfilled our mission and should disband, or we should take some action to justify our existence. Everyone must concede there is no crying demand for more practitioners. On the contrary, in the near future it must become a struggle for a bare livelihood.

The cheapness and ease with which a medical diploma may be secured is an invitation to ignorant and incompetent men to enter an already overcrowded profession. The number of cheap medical schools is appalling, and the unseemly strife for students in some localities is most disgraceful. What remedy offers for this unhappy situation? Consolidation of schools, which have demonstrated their fitness to survive, and the abandonment of the inferior grade, which have neither endowment, equipment nor ability.

This last proposition is humanly improbable of voluntary accomplishment. How shall the weak and consequently unworthy medical school be forced into bankruptcy and extinction? By the united efforts of the better grade of schools of this Association in an attempt to dignify the profession by limiting its membership to men with some degree of education, demonstrating that ours is not a mere trade to be taken up by any illiterate fellow who has the necessary funds.

Our entrance qualifications are absurdly low and wholly inadequate; and when we remember that these slight barriers are continually disregarded by members of this Association, the situation becomes intolerable. Any one of you who conducts correspondence with student applicants, knows this to be an indisputable fact.

In five or more states, the examining boards have increased the entrance demands to a degree which excludes the graduates of schools which admit students on our minimum requirements. This Association, which should be the pioneer and leader in this movement, is but a craven follower because it needs must!

If we raise our minimum demand to a high school entrance, the number of students will be greatly reduced. Is that a misfortune? Certainly not from a professional standpoint. Our revenue will be curtailed, but our power for good and our self respect will be exalted. If we move up as one man our united effort will compel endorsement. If we drift along in the futile fashion of the past few years, we lose our opportunity. If we obstruct the wheels of progress because some weak members may lose their doubtful patronage, we degrade ourselves and our vocation to the level of the tradesman.

If some good fellow and his "alleged" college are submerged in the rising tide, he may be considered an "offering" on the altar of higher education and enlightened progress, and ought to be proud of the opportunity to play the star part once. "Let us be up and doing." Now is the time and this the place to assume our station at the right of the column. Let us sternly enforce our rules, and expel unworthy schools which use this organization to advertise scientific wares which exist only in their prospectus. It will purify the air, advance our cause, and make a membership in this Association a badge of high endeavor.

BY SENECA EGBERT, DEAN OF THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.

In order that there may be no misunderstanding of the attitude of my colleagues and myself in regard to the question under discussion, I would very positively state that I believe that there should be some reasonable and, perhaps, considerable increase in our requirements for entrance into colleges belonging to this Association, not only because the rules and enactments of certain State Examining Boards and State Boards of Health practically compel us to make the change if we are to maintain the dignity and prestige of our Association in their opinion; but also and more especially because the exigencies of the time demand a higher standard.

But there are certain facts and conditions of which we must not lose sight, but all of which we must carefully consider if we are to solve our problem correctly and at the same time maintain the unity and harmony of the Association.

First, in undertaking to raise our standard, we must distinguish between that which is necessary as a preliminary education and that which is unnecessary but desirable, the latter including the knowledge, education and training of a Huxley, a Spencer or a Darwin.

Second, our change must not be too sudden nor too severe, else it will work injustice to many and thus may do more harm than good. No one can deny that conditions to-day are immeasurably superior to those existing at the time of organizing this Association, and we are in favor of a standard of preliminary education much higher than could have been required generally at that time. Let us then have faith that the coming years will justify and demand still greater advances from us, and the ultimate attainment of the ideal of any one here present.

Again, we must not forget that our standard must be elastic enough to apply to all parts of our country; at least, to all the territory covered by the respective schools of our membership; and sufficiently catholic to satisfy practically the essential requirements of any state board, two features that I believe are entirely compatible and easy of attainment. But to secure this we must have the manifestation of the spirit and not the fixation-and-vexation-of the letter in our law. In other words, we should ask of our entering students quality, not quantity, substance rather than time of preparation. We should not insist on diplomas when certificates from reputable and recognized instructors, or a fair and thorough examination by a duly authorized, competent and impartial educator can and does assure us that the candidate is reasonably well-prepared to take up and go on with the study of medicine. And we must remember that, from a pedagogical standpoint alone, the educator (using the word in a broad sense) of our students does not stop short when they enter our colleges, but that our own courses, as at present required by the demands and needs of the profession, are developmental in a high degree.

It is also worth recalling that the best preparatory schools of to-day are usurping part of the one-time work of the literary college, and that they may and do include in their set courses leading to the acquirement of their diplomas much that may come under the head of what is unnecessary in the preliminary education of a medical student.

Lastly, and with emphasis, I believe that it is far more important that this Association should be scrupulously fair to all its members than that it should raise its standard to the detriment of any considerable number of them, however much the latter may seem necessary. Colleges in affiliation with the so-called state universities have an advantage, that can not be gainsaid, over those institutions which are more or less dependent upon their own energies and private enterprise, and the representatives of the former should be broadminded and generous enough not to use this advantage unduly or other than fairly to all concerned. This is the Association of American Medical Colleges—not of the colleges connected with state institutions—and our purpose of association is to advance the standard of medical education throughout the whole country. Can we afford then to do anything which causes the least suspicion that the organization has been used to further the interests of even one of its members against the others?

I am ready and willing to amend Article III of our constitution, but with all due respect to the committee, I think we can amend their amendment for the better.

BY C. E. M'CLUNG, DEAN, SCHOOL OF MEDICINE, UNIVERSITY OF KANSAS, LAWRENCE.

In a discussion of the entrance requirements to the medical schools of the country, due regard must be had to the difference between what is reasonably necessary and what is academically desirable. Local conditions must be met and plans laid to secure the best possible results under the greatest variety of conditions. What is really desired from the secondary schools are well trained students. More and more is it becoming evident that the best training is not always secured by forcing all students to pursue exactly the same course of study.

Medical schools would doubtless consider it desirable if students could come prepared in the modern languages, higher mathematics, and the elementary physical and biological sciences; but, is such a training necessary; or is it even possible in most of the secondary schools? I think few will insist that it is either.

What then is the minimum necessary for thorough work in the medical school? I should be inclined to say that a good four-year high school course is the least that will meet the requirements of the present medical curriculum. In such a course I feel sure that all would agree in making an absolute requirement in English and mathematics. Students well trained in these branches almost invariably prove good students.

Aside from these subjects, it would not seem wise to make a rigid requirement of the high schools. The committee proposing the amendment to the constitution has been wise in making provision to meet local sentiment and conditions by allowing the entrance requirements to the freshman class of the state university to serve as a fulfillment of the requirements of the medical school. These institutions register the possibilities of the high schools of their states. As a rule they demand all that it is possible to secure of the secondary schools. They are also finding it wise and prudent to take from the schools the work they are best prepared to give.

Reasonable objection can scarcely be made to the entrance requirements called for by the proposed amendment. It is certainly in the interests of both the public and the profession. A young man of average ability can finish the work of a four years' high school course at the age of eighteen, and be ready for the practice of his profession by the time he is twenty-two or three. He is then young enough to adapt himself to the conditions under which he will pursue his life work, and, at the same time, he has prepared himself measurably well in the subjects that will make him strong as a man. Surely the physician should be a man of high character and ideals, and a leader in his community. Such he probably will not be if he finishes his general education at the eighth grade, and then narrows down to the grind of his purely professional studies.

And why should not the medical schools demand adequate preliminary training of their students? There are plenty of high schools in the country to educate young men to the standard contemplated by the proposed amendment, so that there would be no lack of students, even were this selfish point of view to be taken. No one can doubt that it would be to the advantage of the medical schools to have better trained students. If it be true then, as I think it is, that benefit would accrue to public, physician, and school by insisting on better preparation for medical work, certainly only a doubtful expediency would suggest contentment with anything less desirable.

BY HENRY S. TAYLOR, ALBANY, N. Y., REPRESENTING THE REGENTS OF THE UNIVERSITY OF NEW YORK (BY INVITATION.)

The topics of discussion before the Association of American Medical Colleges for this session are of keen interest to me. A feeling prevails that the increase of physicians in the United States is out of proportion to the increase in population. The accompanying table shows that in 1860 there was one physician to 576 people; in 1870 one to 617; in 1880 one to 585; in 1890 one to 598; and in 1900 one to 575. In 40 years the population increased nearly two and a half times, but the ratio of population to physicians is practically the same to-day as it was 40 years ago. But, as the number of physicians to the number of persons increased during the last decade more markedly than in any preceding decade, it is fair to assume that the requirements for admission to the practice of medicine should be increased if the general ratio of the 40 years is a proper one.

Table showing ratio of physicians to population as shown by the United States Census:

U. S.	1860.	1870.	1880.	1890.	1900.
Physicians	54,543	62,448	85,671	104,805	132,002
Population	31,443,321	38,558,371	50,155,783	62,622,250	75,994,575
Ratio ...	1 to 576	1 to 617	1 to 585	1 to 598	1 to 575

Assuming that it is safe to advance the requirements for admission to the practice of medicine throughout the United States, should this advancement be made in the general preliminary educational requirement for admission to the medical school, in the professional requirements for graduation, or in both? Without doubt, the new Article 3 strictly enforced will materially advance the preliminary requirements, and a uniform enforcement of the minimum requirements for admission to the medical schools that are members of this Association will materially reduce the numbers of the first class entering on these full requirements. For example, under Item B of Sec. 1, "The diploma of a state normal school having a course of instruction equivalent to a four-year high school course whose credits are accepted by a state university," if interpreted for Massachusetts, will cover a two-year course subsequent to a four-year high school preparation based on eight or nine years of pre-academic or grammar school preparation, which would not be recognized by Harvard for admission to her medical school; while the diploma from an Alabama state normal college secured on a two years' normal course, subsequent to two years of high school preparation, based on six years of pre-academic work, will admit to the junior year of the University of Alabama, i. e., 14 years of scholastic preparation in Massachusetts will not admit to the freshman year of the Massachusetts university, while 10 years in Alabama will admit to the third year of the Alabama university. Hence a uniform enforcement of this section, strictly interpreted, will very materially affect the entrance class to the medical schools of the country. This illustration plainly reveals perhaps the most pressing reform essential to the advancement of the medical profession in the United States to-day, viz., the need of a fixed standard for the measurement of the entrance requirements to professional schools.

The question of advancing the professional requirements is equally important. In the re-registration of medical schools necessitated by New York's advanced statutory requirements, the solution of several important problems leads to the conclusion that an accurate and equitable registration of the medical schools necessitates personal inspection, independent of professional bias. The best available authorities regarding medical schools in 1898 were the American Institute of Homeopathy, the Association of American Medical Colleges, the Illinois State Board of Health, the National Confederation of Eclectic Medical Colleges and the Southern Medical College Association.

A member of the Institute who had served for years on the intercollegiate committee asked regarding the registration of two prominent homeopathic schools by the University of the state of New York. He thought the registration of one of them was a mistake, for that committee regarded it as one of their strongest schools. When he was shown a sworn statement that they made an allowance for admission to advanced standing contrary to the agreement of the committee, he acknowledged that the formal application for registration disclosed conditions not evidenced by annual publications.

The general preliminary educational requirement of the Illinois State Board of Health was plainly below the requirements of the New York statute; hence it became necessary to pass on the general preliminary educational qualification of a candidate for admission to the licensing examination independent of the professional requirement.

The rules of your organization permit an allowance of advanced standing to graduates of schools of dentistry, veterinary medicine, pharmacy, osteopathy, and the like, an allowance not permitted by the New York statute. This has led to the necessity of a distinction between registered and accredited schools, concerning which see the report of the director of the college department for 1902, p. r. 22-30.

The necessity of protecting the interests of students who desire to migrate from weaker to stronger medical schools, made it necessary to register the schools for admission to the licensing examinations independent of the registration for admission to other registered schools. The contention made at your last meeting regarding certain spring schools, that your rules compelled students to remain in such institutions, has some force. A spring school need not necessarily be an inferior school. The relation of receipts to expenditures, of instructors to matriculates, of library, laboratory and clinical facilities to the numbers graduating, are important factors in determining the standing of medical schools which should receive greater consideration than has ever been given them.

Finally, the allowance to be made graduates of colleges of *liberal arts* and sciences must receive careful attention. The independent colleges and medical schools suffer by the drifting of their students to the universities that can afford both lines of work and a combined course saving one or two years of time. The presidents of independent colleges plead for subjects they regard as essential in liberal culture, while the deans of the independent medical schools plead for these stronger students with the college training. All are agreed, however, that the matriculate possessing the baccalaureate degree, other things being equal, is better fitted for entrance on medical study than the graduate of the high school only. We hope that a satisfactory arrangement of a standardized combined baccalaureate and medical course can soon be adopted by the university that will prove satisfactory to the colleges, universities and medical schools of the State of New York.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Phlegmasia Alba Dolens.

E. C. Hill, in *Med. Standard*, recommends in the treatment of phlebitis complicating the puerperal state, that absolute rest be given the affected limb in a felt-lined splint for 25 or 30 days; linimentum opii et belladonnæ be applied locally, followed by a covering of soft lint or oiled silk, care being observed not to blister. After the second week gentle inunction of mercurial or belladonna ointment should be employed. Later slight compression with bandage should be made. The limb should not be used freely until the fortieth day.

Suprarenal Extract in Diseases of the Skin.

M. F. Engman and W. P. Loth, in *Medicine*, recommends the employment of suprarenal extract in diseases of the skin accompanied by vasomotor disturbances. They regard it of no benefit in those conditions of the skin attended with inflammation or exudation, such as acne and eczema. They report splendid results obtained in cases of general pruritus such as *chronic urticaria*, given in five-grain doses three times daily. They invariably use the dried, pulverized extract, gradually increasing the dose unless untoward symptoms are observed, such as nausea, dizziness, tremor, etc. In some cases an accumulative action has been noticed.

Mercury Hypodermically.

Lemoine, according to the *N. Y. and Phil. Med. Jour.*, recommends the following formulæ in the administration of mercury hypodermically:

℞.	Hydrarg. benzoatis	gr. ivss		30
	Sodii chloridi			
	Cocainæ benzoatis, āā	gr. iii		20
	Aquæ destil.	℥i	30	

M. Sig.: Thirty to sixty drops daily, injected hypodermically; or:

℞.	Hydrarg. bichloridi	gr. ivss		30
	Cocainæ hydrochlor.			
	Sodii chloridi, āā	gr. iss		09
	Aquæ destil.	℥i	30	

M. Sig.: Seven to fifteen minims daily; or:

℞.	Hydrarg. biniodidi	gr. 3/4		05
	Atropinæ sulph.	gr. 3/40		005
	Aquæ destil.	ʒv	20	

M. Sig.: Four to seven minims daily; or:

℞.	Hydrarg. peptonatis	gr. iiss		15
	Aquæ destil.	℥i	30	

M. *Sig.: Seven to fifteen drops daily.*

Formaldehyd in Acute Tonsillitis.

A. C. Jordan, according to abstract in *Amer. Med.*, has obtained splendid results from the use of formaldehyd in the treatment of acute tonsillitis, aphthous stomatitis, diphtheritic and scarlatinal sore throat. He employs a 1 to 4 per cent. solution in glycerin. This application should be begun early in the disease. It causes some pain, which lasts for several hours, but the pain is not severe. He states that no food or water should be taken for an hour or so after the application in order that the antiseptic effects may not be disturbed. A gargle of potassium chlorate may be used later in the disease.

Dysmenorrhea.

Dr. F. C. Hammond, in an abstract in *Med. News*, states that the cause should be ascertained. However, there is a large class in which the cause can not be definitely worked out. He divides the treatment into:

1. The prevention of the attack.
2. The treatment of the attack.
3. The treatment between the attacks.

In cases in which there is congestion alone, he advises free purgation the day previous to the flow. According to the author the tincture of gelsemium is of great service in cases of dysmenorrhea occurring in girls and where there is a normal anatomic relation. He administers the tincture in ten-drop doses three times a day, beginning a week previous to the flow. He also recommends in such cases the use of apiol, cimicifuga and potassium permanganate.

In the treatment of the attack rest in bed is advised; hot vaginal or rectal douches and a hot-water bag over the abdomen. Antipyrin, cannabis indica, the bromids, caffein, sodium benzoate and viburnum prunifolium are indicated when the pains are of a neuralgic nature. He condemns the use of opium. Nitroglycerin will relieve the condition if the dysmenorrhea is due to vasomotor spasm; it may be given in one-hundredth-grain doses and repeated in an hour if necessary.

In the treatment between the attacks the general health must be cared for by proper exercise, tonics, baths, clothing and elimination.

Local treatment should be employed in order to reduce the congestion by the use of the tampon, antiseptic and astringent applications, vaginal douching, high rectal injections, pelvic massage, etc. In all cases where a pelvic lesion can be made out as the cause of the dysmenorrhea surgical measures should be resorted to in order to effect a cure.

In the neuralgic form of dysmenorrhea apiol may be used, according to *Merck's Archives*, combined as follows:

℞.	Apiol	ʒii	8	
	Acetanilidi	gr. xl	2	65
	Spts. chloroformi	m. xxx	2	
	Alcoholis q. s. ad	℥ii	60	

M. Sig.: One teaspoonful in water every two or three hours.

Antipyrin may be employed likewise, combined as follows:

℞.	Antipyrini		
	Sodii salicylatis, āā	ʒi	4
	Syr. aurantii q. s. ad	℥ii	60

M. Sig.: One teaspoonful every hour or two until the pain is relieved.

Shoemaker employs the following combination containing apiolin in the treatment of dysmenorrhea:

℞.	Apiolini	m. l	3	30
	Aloini	gr. i		06
	Sulphuris sublim.	gr. l	3	30

M. Ft. capsulæ No. x. *Sig.: One capsule night and morning*, one week previous to and during menstruation.

[Apiolin is a camphoraceous substance derived from the root of parsley. Apiol is an oily mixture containing volatile oil, resin and apiolin.]

The following combination is recommended by *Jour. de Med. de Paris* in the treatment of dysmenorrhea:

℞.	Ext. cannabis indicæ		
	Ext. belladonnæ, āā	gr. 1/4	015
	Olei theobromæ q. s.		

M. Ft. suppos. No. i. *Sig.: One such to be introduced at* night beginning five days previous to the usual time for menstruation.

The following containing camphor and hyoscyamus is frequently prescribed:

℞.	Pulv. camphoræ	gr. xii		75
	Pulv. opii et ipecac.	gr. xx	1	30
	Ext. hyoscyami	gr. xii		75

M. Ft. pilulæ No. xii. Sig.: One pill every two hours until the pain has ceased.

Coryza.

For the relief of coryza, accompanied by obstruction in the nares, Pregnut, in *Lyon Med.*, recommends the following:

℞.	Cocainæ chloralis hydratis			
	Menthol, āā	gr. v		30
	Olei petrolati	ʒii	8	

M. Sig.: Apply locally to the nasal mucous membrane.

Medicolegal.

Presumption as to When Compensation is Due.—The Fourth Appellate Division of the Supreme Court of New York holds, in the case of Bacon vs. Chapman, brought to recover for medical services, that, presumptively, compensation for the services was due immediately on their performance.

Admissibility of Memorandum of Dying Declarations.—The Supreme Court of Wyoming holds, in Foley vs. State, that a paper alleged to contain dying declarations was improperly admitted in evidence, where the statements were written down by one of the physicians in attendance, and the paper was signed and sworn to by him and the other physician and another party, but was not read over to the deceased, and was not signed by him. Under such circumstances, it says, the *writing* is a mere memorandum. It may be used to refresh the *memory* of the witness, but is *not itself* evidence of the declarations of the deceased. To make it admissible, it must have been read over to the deceased, and signed or assented to by him. If, however, the statements contained in the paper above mentioned were admissible as *dying declarations*, when presented to the jury by competent testimony, the court says that it is not prepared to say that the admission of the paper itself, though erroneous, was prejudicial to the accused or reversible error. The two physicians were present as witnesses, and testified that the writing contained substantially the dying declarations of the deceased. They were competent to testify to the declarations, refreshing their recollection by reference to the writing, and the error in admitting the paper was thus rather technical and formal than substantial or material. Furthermore, the court says that dying declarations are obnoxious to the objections which, according to the general rule, exclude hearsay testimony. But in view of the fact that in many cases there are no eyewitnesses to the murder except the slayer and the deceased, they are made an exception to the rule, and admitted on the ground of necessity. If they relate to former distinct matters, they do not come within the reason of the exception, and are not admitted.

Power of Court to Order Physical Examination of a Woman.—The personal injury case of Brown vs. the Chicago, Milwaukee & St. Paul Railway Company, the Supreme Court of North Dakota says, presented, for the first time in that jurisdiction, the question as to the court's power to require the party suing in a proper case to submit her person to a physical examination. Here the party suing alleged permanent injury to her uterus and bladder, also the fracture of the hip bone. The trial court took the ground that it was without power to make or enforce an order for the examination of her person by a physician; or that if it was in error on that point, and had such power in a proper case, yet in this case, in view of the party suing being a woman, and in view of the examination necessary under all the circumstances, still would it decline to make the order, for the reason that it would in this case be an ordeal to which she ought not to be subjected. But the Supreme Court holds that the court possessed the power in this case, and that it was an abuse of discretion to refuse to require the party suing to submit herself to the examination of physicians under such reasonable restrictions as the court should prescribe. It holds that in an action to recover damages for personal injuries alleged to be permanent, the trial court has power to require the injured party to submit her person to an examination of physicians or surgeons designated by the party sued, when, in the exercise of a sound judgment, it appears to the court that the necessity of the case demands such an examination. To permit the party suing and a physician of her selection, after examination of her person, to testify that her injury was permanent, and to deny the party sued the privilege of having the alleged injuries examined by competent surgeons to enable them to see from what, if any, injuries she suffered, their nature, extent and probable duration, was an abuse of discretion, and reversible error. The party suing in a personal injury case, by the commencement of her action, impliedly consents to the doing of that measure of justice which she exacts. She can not claim damages for injuries which she conceals from the reasonable inspection of witnesses when such inspection is necessary to equip them to testify on the trial concerning such injuries. She must, so far as in her power, enable the court, jury, and the adverse party to have the best evidence which can be produced in the case. It was no answer to the company's request for an examination that it would offend the modest and womanly instincts of the party suing to require her to submit to an examination of experts. She told a jury of 12 men of her pains; how and when they affected her. She submitted to a digital examination of her injured parts by two physicians of her own selection. It would have been no greater indignity to be examined by other doctors. Neither was it an answer that one physician had examined her and testified to what he found, and was cross-examined by the company. Surgeons of equal learning and honesty may not diagnose an injury in the same way. They may not be equally strong in perception, or equally accurate in observation or in measurements, and thus form different judgments of the existing conditions, which, of necessity, must constitute the basis of their scientific opinions. If a party sued must make his defense against the expert opinions of the chosen surgeons of the party suing, without the opportunity of testing the verity of the basis of such opinions, he may be placed at a disastrous disadvantage, such as the law can not and does not sanction. The company's right was, through an examination, to test the effect and reduce the weight of the evidence introduced by the party suing. The courts of Massachusetts, Texas, and Delaware, in following the Supreme Court of the United States in denying the power to require an examination, under penalty of a dismissal of the case for refusal to submit to same, did not notice the influence which the federal statute had on the determination of the question by that court.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

August 1.

1 *Chronic Postdiphtheritic Laryngeal Stenosis as a Cause of Persistent Intubation of the Larynx. Henry W. Berg.
2 *Two Cases of Congenital Elevation of the Shoulder, with a Review of the Reported Cases. Russell A. Hibbs and H. Correll-Loewenstein.
3 Life and Its Physical Basis. Axel E. Gibson.
4 *A Signal Test for Color-Blindness. Percy Fridenberg.

1. **Chronic Postdiphtheritic Laryngeal Stenosis.**—Berg's article gives the causes of prolonged intubation, the effects of defective tubes (too large in the swelling, or roughened in surface) in causing necrosis or pressure sores, the dangers of such conditions and the occurrence of autoextubation. The prevention of these pressure sores forms an important part of the treatment and depends on the selection of the proper sort of tubes and care in the technic in intubation and extubation. When the case has developed into a tube case we should see whether the stenosis is due to pressure sores or decubitus with swelling, to decubitus followed by cicatricial contracture or decubitus with paralysis of the vocal cords, or a combination of these. If cicatricial stenosis is present, persistent intubation with a tube of just the right size to pass through the strictured larynx without difficulty, but not to be forced out, is most apt to be successful, and the intubation is not to be done too frequently. The use of astringent ointments on the tubes, the author thinks, is hardly necessary, from his experience. It may take months or years before the patient can get altogether along without the tube. Cases of paralysis of the vocal cords due to pressure on the recurrent laryngeal nerve without cicatricial stricture, are best treated by intubation with either a larger tube than is usual for the age of the patient, or one with an increased swelling; this should be nearer the neck of the tube than is usually the case. For atresia of the larynx, surgical treatment is the only method.

2. **Congenital Elevation of the Shoulder.**—Hibbs and Loewenstein report two cases, and classify the conditions thus: "1. With a bony bridge between the scapula and vertebral column; 2, with absolute absence of one or two muscles forming the shoulder girdle; 3, cases with a long and turned over supraspinous portion of the scapula; and 4, cases without bony overgrowth, the scapula normal or smaller, with shorter or otherwise defective muscles." They refer to published cases according to their classes, and discuss the etiology of the anomaly. In the first of the cases reported, the defect seemed to be due to a triangular piece of bone continuous with the scapula and articulating with a pivot joint to the seventh cervical vertebra, due to epiphyseal overgrowth of developmental origin, starting early in fetal life. The second class of cases is due to congenital lack of one or two muscles. The third class is due to the curved and possibly enlarged condition of the supraspinous portion of the scapula, which is accounted for according to the Sprengel theory as the outcome of intra-uterine pressure due to a lack of amniotic fluid. The fourth class of cases is of obscure origin, and represents conditions that have not been sufficiently studied. Probably some of them are not truly congenital. In the first and third classes, the only treatment is to resect the bony bridge or bent forward piece of bone; in the second class, orthopedic appliances to press the shoulder down and substitute the missing depressors where required. The fourth class will probably have to be treated orthopedically, by apparatus, massage, exercise, electricity, and, in selected cases, by the knife.

4. **Color-Blindness.**—Fridenberg notices the defects of the Holmgren test and its advantages if supplemented by a proper lantern test. He describes a lantern which he has devised.

The Boston Medical and Surgical Journal.

July 30.

5 The Sources, Favoring Conditions and Prophylaxis of Malaria in Temperate Climates, with Special Reference to Massachusetts. (Shattuck Lecture.) Theobald Smith.
6 *Problems of Clinical Anatomy. Thomas Dwight.
7 *The Need of a Supplementary Lantern Test for the Proper Examination of Color Perception. Charles H. Williams.
8 Efforts to Abate the Mosquito Nuisance in Brookline. H. Lincoln Chase.

6. **Problems of Clinical Anatomy.**—Dwight calls attention to the fact that *all* people are not made alike; that there are variations of structure often not recognized during life, knowledge of which would have helped the medical practitioner, and especially the surgeon. The results of certain series of observations are also, he thinks, establishing the law that certain pathologic conditions have their origin in some peculiarity of development. He calls attention to certain special points, such as the paralysis of the muscles of the larynx, in the symptomatology of aneurism of the right subclavian artery. *Nevertheless, this may not occur*, owing to a deviation of the artery which arises from the region of the aorta and passes behind the esophagus to its destination. Here the inferior laryngeal nerve is *not recurrent*. He expects to find this arrangement at least once a year in the dissecting room. Another is the peculiarity of the aorta in severe Pott's disease, where it lies, as it were, half coiled around the spine. Still another anomaly is the fusion of the atlas with the occiput, the existence of new bones and fusion of others, etc.

7. **Color-Blindness.**—Williams describes the lantern he has devised to test color vision supplementary to the Holmgren test, the defects of which he recognizes.

Medical News, New York.

August 1.

9 *Fetal, Congenital and Infantile Typhoid. John Lovett Morse.
10 *Some Cases of Prostatectomy, Observed *After an Interval*. Alexander B. Johnson.
11 Case of Bothriocephalus Latus in a Woman Immigrant, with Remarks on the Occurrence of this Parasite in America. William N. Berkeley.
12 Hernia. S. W. S. Toms.
13 Thiocol. J. Leffingwell Hatch.
14 *On the Presence of Specific Coagulins in the Tissues of Vertebrates and Evertebrates. Leo Loeb.
15 Pustulation and Its Accompanying Secondary Fever a Complication and Not an Essential Symptom of Smallpox. Jennie G. Drennan.

9. **Infantile Typhoid.**—See abstract in Journal, vol. xl, April 11, 1903, p. 1018.

10. **Prostatectomy.**—Johnson operates by a perineal incision, with a second abdominal incision, the latter being utilized to afford access to the prevesical space, the fingers of the left hand inserted in this abdominal wound, making counter-pressure to the fingers of the right hand, working in the perineum. He makes a perineal incision, convexity forward, and, after separating the muscles surrounding the urethra from the anterior extremity of the sphincter ani, exposes the prostate by blunt dissection, using the sound in the urethra as a convenient guide. When the prostate is reached, it is pushed downward by the fingers of the left hand, into the perineum, and can generally be brought in sight. An incision is then made obliquely upward and outward through the capsule of each lateral lobe, and the enucleation accomplished by separating the capsule with the forefinger of the right hand. There is apt to be a tear of the urethra on one side or the other, and it is utilized for the drainage tube subsequently. He speaks particularly of the utility of the downward pressure from above in putting the prostatic plexus of veins on the stretch and thus preventing the bleeding. A suprapubic opening into the bladder is not advisable, and the infectious urine in the wound not at all advantageous. He reports cases observed at intervals of one or two years or more with good results; in all of them sexual power or desire has been diminished or lost.

14. **Specific Coagulins.**—Loeb found that the muscular tissues of various animals have a coagulating power on the blood of the *same species*. These coagulins are analogous to certain *substances* which are obtained through the process of immunization, namely, the agglutinins, precipitins, and lysins. The probability is not excluded that these coagulins may also act on other species, though less strongly. Each species of animal so far tested has specifically adapted means for preventing a dangerous loss of blood. The origin is probably of interest; it is not entirely explained by a selective process. The possibility of its being due to the lymph is excluded by the author as improbable, as a careful washing of the tissue does not diminish the influence of the tissue on coagulation, and he finds it can be definitely proven that the influence of a piece of muscle of a lobster is derived from the muscle itself.

American Medicine, Philadelphia.

August 1.

16 *Appendicitis as an Incident in Development. Woods Hutchinson.
17 *Bradycardia as a Symptom. Roland G. Curtin.
18 A Study in Astigmatism. Arthur G. Bennett and J. C. Clemesha.
19 *The Teaching of *Personal Hygiene*. Arthur L. Pyle.
20 *An Ideal Method for Drainage in Cholecystostomy. Alois B. Graham.
21 A Case of Metastasis of Mumps to the Brain. H. E. Wright.

16. **Appendicitis.**—*Hutchinson* considers that Ochsner's method of treating appendicitis is simply a return to Nature's methods in the case, and while he was first inclined to doubt, the observation of the practice of one of his surgical confrères has convinced him of its excellence. He describes the embryologic development of the appendix, and its occurrence in the lower animals. Of course, the operation for the removal of the appendix, in the interval, is advisable, but he thinks that Ochsner's plan to help Nature in walling off the inflammation is the correct one.

17. **Bradycardia.**—Curtin notices the effects of bradycardia and conditions in which it has been observed, pointing out that it is so common a symptom and occurs in so widely different diseases that it can be of only small diagnostic value. In a constitution not undermined by disease, and with a gradual subsidence, it need not be considered a *grave* symptom. On the other hand, if associated with or caused by a depressing chronic condition, especially of the cardiovascular system, it becomes a very serious symptom. When accompanied by anginose symptoms, it is frequently followed by sudden death.

19. **Hygiene.**—See abstract in The Journal, vol. xl, p. 1528.

20. **Drainage in Cholecystostomy.**—Graham describes the method of drainage of the gall bladder after cholecystostomy, devised by Dr. George J. Cook, which is performed as follows:

> The drainage tube employed should be of large caliber and possess firm walls, so as to be not easily compressed. *Its proximal* end is firmly fixed in the gall bladder by a purse-string suture. Its distal end should not project more than one and one-half to two inches beyond the edges of the wound. To this end is firmly tied an extra large and extra thick condom or rubber sac. The *gauze dressings* are next applied; on these is placed the condom or rubber sac, and this is well surrounded and covered with cotton. All are retained in position by a binder bandage snugly adjusted. It can readily be seen that by this method we have produced *an artificial gall bladder*, and it lies in close proximity to the gall bladder which is to be drained. This so-called artificial gall *bladder* is removed once or twice every twenty-four hours, emptied, and thoroughly cleansed, after which it is again placed in position.

He *claims* for it the advantages of being ideal and complete, simple and easy of performance, cleanly, enables the patient to change position without assistance; the bile is collected in a pure state and can not become contaminated, and it enables one to study the influence of the so-called cholagogues on the bile secretion. It is so superior to Dr. Kehr's method that it is hardly comparable. His careful perusal of the literature, however, has failed to reveal previous mention of it.

New York Medical Journal.

August 1.

22 *Remarks on Medical Instruction; a Plea for Greater Uniformity. N. R. Coleman.
23 *The Psychical Relations of Tuberculosis in Fact and Fiction. G. A. De Santos Saxe.
24 *The Death Rate of Pneumonia. *Thomas J. Mays.*
25 *Dhobie Itch. Charles F. Mason.
26 Complete Removal of the Left Vocal Cord for Malignant Disease; Presentation of the Patient. Walter F. Chappell.
27 Chronic Lymphatic Leucemia Complicated by Pneumonia. T. Stuart Hart.

28 *An Improvised Method of Operating for Varicocele Lucien Lofton

22 Medical Instruction.—Coleman's address is in the line of his former address published in THE JOURNAL, vol. xl, p. 375, Feb 7. 1903, but with more special reference to the medical curriculum

23 Tuberculosis.—Saxe's article is to be continued. He reviews the characteristics of tuberculosis as given in literature, and in medical literature also, the consumptive type of insanity the loss of self-control and increase of susceptibility to external mental influences, the variability of temper, and the alleged effect of the disease on the sexual instinct.

24 Pneumonia.—The alleged increase of mortality from pneumonia is noticed by Mays, who gives figures to show the ratio of deaths in various cities from pneumonia, tuberculosis and heart disease He says:

> In summing up the results of this investigation the following points seem to be fairly well established First, there is no good reason for believing that pneumonia has gradually sprung into such prominence as to cause present or future alarm, for its highest death rate occurred before 1896 and since, that time it has declined 21 17 per cent Compared with heart diseases as a death menace, if such a term is permissible *pneumonia ranks rather low*, for, in Chicago the latter increased 350 per cent, and the former 450 per cent in forty two years In the District of Columbia there is a marked decline in the pneumonia rate during the twenty six years, while the deaths from heart disease increased 105 per cent in the same time In New Jersey, during twenty three years the deaths from pneumonia increased 30 95 per cent and from heart diseases 55 55 per cent In the composite chart the total increase of pneumonia deaths is not quite 10 per cent, while those from heart diseases increased 85 85 per cent
>
> Second that in a number of the above named localities the phthisis rate diminished from the beginning of the record, that there is a reduction in all of them in this respect from the early eighties to 1898, and that from the latter point of 1902 there is a general net increase Louis the District of Columbia Baltimore, and Rhode Island give a total increase o York a decrease of 4 15 per cent, while Chicago, Buffalo, Richmond, Reading New Jersey neither increase nor decrease, leaving therefore, a net phthisical increase of 113 02 per cent for the last five years, or between 1898 and 1902
>
> Third, that the natural average decrease in the death rate of phthisis is between 2 and 3 per cent a year This is shown in the composite chart, and in all the other charts in which a persistent decline occurred for a number of years in succession
>
> On the whole, we may, therefore conclude that deaths from pneumonia are decreasing, that deaths from disease of the heart are increasing, and that deaths from phthisis decreased until five years ago, but have markedly increased since that time

25 Dhobie Itch.—There are at least three types of infections known as dhobie itch, according to Mason; two of them mycotic, due to *Microsporon minutissimum* and the trichophyton, and one bacterial pemphigus contagiosus He says that the disease has been introduced into this country by soldiers returning from tropical service, and will probably become more prominent, especially where washing is not done by boiling The prognosis will depend on the disease, whether mycotic or bacterial, and he describes pemphigus contagiosus, the treatment of which consists of thorough cleanliness of the parts and of the underclothes, with a twice daily sponging with a 1 1,000 solution of mercury bichlorid, followed when dry by a powder of equal parts of zinc oxid, boric acid and starch If the mycotic dhobie is found, tincture of iodin, glacial acetic acid, 5 per cent. salicylic acid ointment, and 1 to 500 alcoholic solution of corrosive sublimate, would be effective in the order named

28 Varicocele—The method adopted by Lofton for this condition is the needling application of the ligation plan, and is described as follows:

> The testicular case is prepared for action in the usual surgical manner The patient is permitted to assume the semi recumbent posture when the scrotum is grasped with the left hand, the index finger and thumb separating the vas and the spermatic artery i e, placing them on the anterior border of the testicle, while the pampiniform plexus is brought well up against the anterior and upper walls of the bag, and held there firmly With an ordinary curved surgeon's needle three inches in length, armed with a double strand of No 2 fiddle string the pouch is pierced at the seat of election and the mass transfixed, the needle being curved at an angle of forty five degrees penetrates the opposite inner wall of the scrotum but does not perforate it With the point of the left index finger the needle is guided so as to slip along the inner wall of the bag, making a half circuit of the interior lining and over and above the transfixed veins and is brought out at the original puncture and securely tied to the dangling ends of the external ligature Caution must be observed in drawing the mass of veins well up against the inside anterior wall of the scrotum This procedure if it is thought necessary, may, at the same sitting, be duplicated from one to three times at whatever points the surgeon's judgment may dictate If you are sure you have separated the spermatic cord and artery from the general mass you may tie firmly at once; if not, gradual tightening is advised, as this will indicate the condition of affairs. The tying of the cord and artery with the veins is a mistake that some good men have made, but, with ordinary precaution, it should not occur. However, when this is done, great pain radiating from the lumbar region to the testicle on the affected side, and even on the penis, immediately sets in, and if not remedied, atrophy of the testicle will follow.

There is only one opening made in the scrotum and, when secondary inflammation sets in, the mass should be securely welded to the anterior walls The patient can continue at his business without interruption. He has not had any severe inflammation or pain follow the procedure or any elevation of temperature in his cases. A well-fitting suspensory, of course, is advised for some weeks, and the bowels and kidneys should be in a healthy condition Recovery follows on an average in from twenty-five to thirty days, and complete atrophy of the veins in about six months.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

July 25

1 *Remarks on Ectopic Gestation and the Conditions Favorable for Its Advance to the Full term John Ward Cousins
2 A Case of Puerperal Eclampsia Robert McDowell. With remarks by Professor Byers
3 *On Influenzal Orchitis with Three Cases R. Clement Lucas
4 The Causes of Acute Abdominal Pain in the Healthy, Exclusive of Traumatism J. Lynn Thomas
5 Hernia of the Bladder as a Complication of Inguinal Hernia. G B Ferguson
6 Further Observations on Alcoholic and Arsenical Neuritis Ernest Septimus Reynolds
7 A Case of Ankylostomiasis in Scotland Ralph Stockman
8 *Treatment of Atrophic Retina with Retinal Extract. Robert W Doyne
9 Two Cases of Fracture of the Base of the Skull, Which Recovered After Venesection Stephen Paget.
10 The Buried Unabsorbable Ligature and Its Sequelæ. C. Hamilton Whiteford
11 The Treatment of Hydrocele by the Method of Seton. A. A. Scot Skirving.

1. Ectopic Gestation.—The conditions favorable for carriage of the fetus to full term in ectopic gestation, are given by Cousins, as, first, early continuous mobility of the ovum; second, slow subperitoneal expansion of the sac; third, absence of urgent symptoms indicating intraperitoneal or extraperitoneal rupture; fourth, the early ascent of the fetus toward the abdominal cavity; and fifth, the lateral position of the placenta in relation to the gestation sac and its upward expansion and elongation. He discusses the etiology of ectopic gestation. He thinks that while there are many unsettled points, the following conditions may be taken as a basis for further investigation: first, the fertilization of the ovum sometimes occurs within a tube in which the lumen has been distorted by chronic changes within or around it; second, that in addition to some form of mechanical obstruction, the tubal mucosa may be changed under genetic influence into decidual tissue, and that this structural change is necessary for the vital attachment of the embryo

3 Influenzal Orchitis.—From cases he reports, Lucas assumes that often the inflammation of the testis may follow influenza close on the fever; that after one is recovered, the other may be attacked; second, that when there is an epidemic of influenza in the neighborhood, sporadic cases probably occur as the result of the influenzal germ, though the direct connection may be difficult to trace.

8 Atrophia Retinae.—Doyne has experimented with retinal extract in cases of retinal atrophy, on the theory of charging the blood more richly with the retinal constituents, and thus compensating for a lack of the usual nutrition. His results have been such as make him conclude that there is a certain amount of benefit in this treatment in cases of retinal, but not optic nerve, atrophy.

The Lancet, London.

July 25

12 *Some Improvements in the Method of Local Analgesia: Clinical Remarks Arthur E J. Barker
13 *Causes Prevalence and Control of Pulmonary Tuberculosis (Milroy Lectures) H Timbrell Bulstrode

14 *An Inquiry Into the Susceptibility of Criminals to Atmospheric Changes. W. Norwood East.
15 Roentgen Rays in the Diagnosis of Lung Disease. David Lawson and R. Hill Crombie.
16 Some Further Improvements in the Procedures for Testing and Judging by the Naked Eye of the Agglutinating and Bacteriolytic Effects Exerted by the Sera of Patients Suffering from, or Preventively Inoculated Against, Typhoid Fever, Malta Fever and Tuberculous Affections. A. E. Wright.
17 Observations on Mastication. Harry Campbell.
18 The Conservative Treatment of Lesions of the Uterine Appendages. George Granville Bantock.
19 Have the Locality and Surroundings an Influence on the Recurrence of Malignant Disease After Operation? D'Arcy Power.
20 Hepatectomy for the Removal of Riedel's Lobe. Charles Barrett Lockwood.
21 Enzymes in Tumors. Arthur Harden and Allan MacFadyen.
22 The New Royal Victoria Hospital, Belfast. Prof. J. W. Byers.

12. **Local Analgesia.**—The difficulty of applying in practice the discovery of Corning, that a local anesthetic introduced to any part of the nerve trunk would abolish its sensation to its minutest termination, is first noted. Barker was led by this to adopt the principle laid down by Braun of Leipsic, that anything that retards or diminishes the circulation of the blood in the part, enhances the power of the analgesic agent, and followed Braun's suggestion of investigating further whether the diminution produced by the injection of adrenalin would not also have this effect. His results were good. He gives the proportions which he used;. two grains B-eucain with ten grains of chlorid of sodium, added to 100 cubic centimeters of boiling distilled water, then a cubic centimeter of solution of adrenalin was added when the fluid had cooled. The difficulty of keeping the solution of adrenalin perfect, is mentioned, and he suggests that this preparation be put up in thin glass capsules like those of nitrite of amyl, which can be broken at the time needed. He has operated by this method in a number of cases of hernia and tumor extraction, varicose veins, skin grafting, abscesses, etc., and considers the success of the local anesthesia thus applied very marked.

13. **Pulmonary Tuberculosis.**—Bulstrode gives here in tabulated statement the statistics of tuberculosis in various countries and cities, Prussia, France, Denmark, Switzerland, etc., showing that in all, except it may be in France, a very marked diminution in the phthisis mortality.

14. **The Susceptibility of Criminals to Atmospheric Changes.**—East, a medical officer of the convict prison at Portland, has studied the effect of atmospheric changes in criminals under his charge. Normal individuals are markedly affected by atmospheric changes, but he finds that criminals are practically insensible to their influence. The facts seem to confirm the view that criminals are less susceptible to external impressions than are normal individuals.

Revue Medicale du Canada, Montreal.

23 (VI, 38.) La transmission des maladies par les sièges des latrines (by water closet seats). M. T. Brennan.
24 (No. 45.) De l'inflammation et de son traitement. J. P. Rottot. (Concluded.)
25 (No. 47.) Certain Drawbacks of Rectal Injections. M. T. Brennan.—Certains méfaits des lavements en chirurgie abdominale et en gynécologie.
26 (No. 48.) Quelques usages de l'acide picrique. Ibid.
27 (No. 51.) *Epilepsie menstruelle traitée par la transplantation ovarienne. Ibid.

27. **Operation for Epilepsy with Transplantation of Part of the Ovaries.**—Brennan operated last November on a young woman of 19 who had suffered from epileptic seizures since her first menstruation at 8 years of age. They recurred sometimes as often as three a day, and usually about six to fourteen a month, but seemed to be restricted to the menstrual period. No clinical lesion could be discovered, and the family history was good, the patient living in a Vermont town in easy circumstances. After failure of all other measures and loss of 40 pounds in weight during the last few months, Brennan removed both ovaries. A piece of the left ovary the size of a bean was transplanted in the fundus of the uterus. There was a very severe seizure the next day, but that was the last, and to date, June, 1903, there has been no recurrence nor any symptoms that might be attributed to the artificial menopause, except that after exceptional fatigue, on five or six occasions, there has been a slight nervous crisis.

Archiv f. Allg. Pathologie, Etc. (Virchow's), Berlin.

28 (CLXXIII, 1.) Osteogenesis imperfecta. F. Michel (Marburg).
29 Biologic Study of Blood in Arthropoda. L. Loeb (Montreal).—Ueber die Bedeutung der Blut-Körperchen für die Blut-Gerinnung und die Entzündung einiger Arthropoden und über mechanische Einwirkungen auf das Protoplasma dieser Zellen.
30 Anatomische Untersuchungen zur Frage der beginnenden Prostata-Hypertrophie. A. Rothschild (Berlin).
31 Adenomyome des Pylorus. E. Magnus-Alsleben (Strasburg).
32 Three Remarkable Tumors in or on the Stomach. F. Mlodowski (Breslau).—Drei bemerk. Tumoren im und am Magen.
33 Postmortal Changes in Pupils. Placzek (Berlin).—Ueber Pupillenveränderungen nach dem Tode.
34 Fatal Hemorrhage from Arrosion of Renal Vein from Chronic Gastric Ulcer. H. Merkel (Erlangen).—Fall von chron. Magengeschwür mit tödicher Blutung aus der arrodierten linken Nierenvene.

Archiv f. Klin. Chirurgie, Berlin.

Last indexed XL, page 131.

35 (LXIX, Nos. 1-2. Esmarch Festschrift.) *Zur radikalen Behandlung der Darm-Invagination. von Eiselsberg.
36 *Surgical Experiences with Carcinomata of Intestines. J. v. Mikulicz.—Chir. Erfahrungen über das Darmcarcinom.
37 Osteotomie und Osteoklase bei rhachitischen Deformitäten der unteren Extremität. T. Kölliker.
38 Ueber die Entstehung und Behandlung des Hohlfusses (talipes cavus). L. Heusner.
39 Zum Mechanismus des Plattfusses (flat foot). F. Petersen.
40 *Treatment of Cavities in Tibia. F. v. Mangoldt.—Zur Behandlung der Knöchenhöhlen in der Tibia.
41 Arthrodesis of Flail Joint in Shoulder. O. Vulpius.—Ueber die Arthrodese des paralytischen Schlottergelenks der Schulter.
42 Origin and Treatment of Spondylitic Paralysis. H. Tillmanns.—Ueber die Entstehung und Behandlung der spondylitischen Lähmungen.
43 Fractures of Femur. R. Klapp.—Zur Behandlung der Oberschenkelbrüche.
44 Histologische Knochenuntersuchungen bei tabische Arthropathie. Barth.
45 Secondary Incision of Thorax. C. Beck (New York).—Exploratives Prinzip und Technik bei sekundärem Brustschnitt.
46 Symmetric Lachrymal and Salivary Affections. H. Haeckel.—Zur Kenntniss der symmetrischen Erkrankung der Thränen- und Mundspeicheldrüse.
47 *Zur Kenntnis der Pustula maligna. R. Hoelscher.
48 Klinische Mitteilungen. R. Fischer (Berlin).
49 *Ueber Carcinom-Entwickelung. De Ruyter.
50 Die Rhinoplastik aus dem Arm. H. Waltz.
51 *Die Behandlung septischer Erkrankungen mit intravenösen Collargol (Arg. coll.) Injektionen. Credé.
52 *Die Hepatikus-Drainage. Berger (Kehr's clinic, Halberstadt).
53 Weiterer Beitrag zur diagnostischen Bedeutung der Leukocytose bei Appendizitis. M. Wassermann.
54 Klinische Mitteilungen. H. Schüssler (Bremen).
55 Die Elastizität der Muskeln und ihre chirurgische Bedeutung. Tilmann.
56 *Ueber die Winkelmann'sche Hydrocelen-Operation. F. Klaussner.
57 *Present Status of Surgery of Pharynx, Larynx and Trachea Gluck (Berlin).—Der gegenwartige Stand der Chirurgie des Schlundes, Kehlkopfes und der Trachea.
58 Syphilitic Inflammation of Striated Muscles. Busse.—Ueber syph. Entzündung der quergestreiften Muskeln.
59 Notes in Orthopedic Practice. Hoeftmann.—Mitteilungen aus der Praxis.
60 Zur Kasuistik des arteriell-venösen traumatischen Aneurysma. E. v. Bergmann.
61 Ueber primäre akute Typhlitis. Jordan.
62 *Influence of Vitality of Tissues on Local and General Toxic Action of Local Anesthetics and the Importance of Adrenalin for Local Anesthesia. H. Braun.—Ueber den Einfluss der Vitalität der Gewebe auf die örtlichen und allg. Giftwirkungen lokal anesthesierender Mittel, etc.
63 Exposure of Hip Joint by Larghi Curved Incision. A. v. Bergmann.—Zur Freilegung des Hüftgelenks durch den Larghi'schen Bogenschnitt.
64 Ueber die Operation der Cholecystitis acuta infectiosa im akuten Stadium. W. Körte.

35. **Radical Treatment of Invagination of Intestines.**—Eiselsberg's experience includes 13 cases of invagination, 3 acute, 3 subacute and 7 chronic. The cause of the invagination was polyposis in 3 cases and a cicatrix or neoplasm in 4, while in 6 there was merely an abnormally long mesentery. He advises cautious attempts to reduce the invagination in order to determine how large a part of the intestine is involved. In acute cases or in much debilitated subjects the intervention should be restricted to this alone. Under other circumstances he advocates total resection to prevent recurrence. He succeeded in reducing the invagination in 5 cases and partially in 3 out of 12 in which he attempted it, and 9 of the 12 in which he performed total resection have been definitely cured. He absolutely rejects enteroanastomosis for this purpose, as also an artificial anus.

36. **Carcinomata of Intestines.**—Mikulicz's article is scarcely adapted for an abstract, as he reviews his extensive experience in detail.

40. **Treatment of Cavities in the Tibia.**—Mangoldt has found that a cavity in the tibia gradually becomes smaller and finally becomes entirely obliterated when it is lined with a flap of skin and periosteum. Small cavities can thus be lined with a tongue-shaped flap with a broad base fitted into the cleaned and leveled cavity, but larger ones require a flap of skin and periosteum drawn down from the margin of the wound after undermining it enough. A rapid and durable covering for a large cavity can be obtained with Thiersch flaps or Mangoldt's method of sowing epithelium. Cavities in the epiphysis may be lined with a turned-over flap of skin and periosteum. The cavities lined with transplanted flaps heal perfectly, but do not grow smaller as occurs with the pedunculated flaps. He describes a dozen cases in detail. In 2 the cavity became spontaneously obliterated after it had been lined with a pedunculated flap of periosteum taken from under the skin.

47. **Pustula Maligna.**—Hoelscher found pure cultures of staphylococci in 2 out of 7 cases of pustula maligna. All the patients recovered.

49. **Development of Carcinoma on Inflammatory Processes.**—De Ruyter reports a case of two carcinomata developing on the nasal mucous membrane consecutive to an old empyema of the antrum of Highmore. In a second case the carcinoma developed in an inflamed and cystically degenerated mamma, and in the third on the basis of an old perityphlitis.

51. **Collargol in Septic Processes.**—Credé reiterates his recommendation of collargol for all septic processes. In mild or moderately severe cases it can be used in inunctions, but in the severe and urgent it should be applied from the start in intravenous injections.

52. **Draining of the Hepatic Duct.**—Kehr's views have been presented in THE JOURNAL from time to time, and his address at Washington on this subject was summarized on page 1598 of the last volume. This article is a detailed statement of the technic, operations and results at his clinic, a total of 25 cases of cholelithiasis treated by drainage of the biliary passages.

56. **Winkelmann's Operation for Hydrocele.**—Klaussner has collected 104 cases of hydrocele in the literature treated by Winkelmann's operation. There has been recurrence in 2 out of this number. He has performed the operation himself in 35 cases, and recommends it for all uncomplicated ones in which the tunica vaginalis is not too rigid to be turned over in this way.

57. **Surgery of Larynx, Trachea, Etc.**—Gluck has been a pioneer in the extirpation of the larynx and pharynx, and his results have been very fine. He describes in detail his technic, apparatus for closing fistulæ, for improving phonation and for substituting parts of the defects in these organs. Only one has died out of his 22 patients whose larynx he has extirpated.

62. **Influence of Vitality of Tissues on Toxic Action of Local Anesthetics.**—Braun's experiments and conclusions are along lines almost identical with those of Barker, No. 12 above. Barker refers to Braun.

Janus, Amsterdam.

Last indexed page 403.

65 (No. 4.) The First Russian M.D. L. Stieda.—Der erste russische Doctor der Medicin. P. W. Postnikow.
66 Library Demonstrations in the Teaching of the History of Medicine. J. Finlayson (Glasgow).
67 The Tercentenary of the Faculty of Physicians and Surgeons, Glasgow. Ibid.
68 Rôle of Physicians in Annals of History. P. Fabre (Commentry).—Les medecins annalistes. (Concluded.)
69 La peste à Delft en 1557-1558 et en 1573. L. Meunier.
70 (No. 5.) *Qu'est ce que signifie "la modorra"? H. F. A. Peypers.
71 *Attempt at Identification of the Medicinal Plants Mentioned by Dioscorides. (From the drawings on a manuscript in the Paris Library.) E. Bonnet (Paris).—Essai d'identification, etc. (Concluded.)
72 Salomo Levy Steinheim. J. Pagel. (Concluded.)
73 (No. 6.) *On Indications of the Haschish Vice in the Old Testament. C. Creighton (London). (Concluded).
74 Records of Strasburg Midwives' Training School. R. Landau. Eine Urkunde der Str. Hebammenlehranstalt.

70. **"Modorra."**—Peypers has been comparing the historic accounts of the epidemics of "modorra" in the Canary Islands in 1494, and the two later centuries. He thinks that the word was used to express bubonic plague and not sleeping sickness, as some have recently asserted.

71. **Attempt at Identification of the Medicinal Plants Mentioned by Dioscorides.**—Bonnet reproduces some of the drawings on the ancient Greek MS. and establishes the identity of a large number of the plants whose medicinal virtues are described. Some of the drawings are reproduced.

73. **Indications of the Haschish-Vice in the Old Testament.**—Creighton gives a new rendering of certain words in the Old Testament, endeavoring to prove that the disreputable intoxicant drug of the east, haschish, was known and used then, and that the vice was recognized as such and attempts at regulation made. It did not come under the head of a drink but of food, and he argues to prove that it was the secret of Jonathan's and Samson's strength and of Saul's madness. Samson's "strength" collapses, just as Saul's "courage" fails, the stimulant having lost its power, and being followed by hebetude. Creighton thinks that the "grass" on which Nebuchadnezzar fed was this same drug. He was in fact first interested in the subject by noting the similarity between the ordinary Arabic word for grass, hachach, and haschish, the term for Indian hemp. He concludes by suggesting that the first chapter of Ezekiel, with its phantasmagoria of composite creatures, wheels, and of brilliant play of colors is unintelligible from any point of view except that of the subjective visual perceptions induced by haschish. He adds that this chapter caused long hesitation before the book of Ezekiel was included in the accepted text of the Bible. The article is in English.

Riforma Medica (Palermo).

Last indexed page 346.

75 (XIX, 19.) *Study of Abscess of Spleen. A. Cipollina.—Contributo allo studio dell'ascesso della milza.
76 *Hypochloruria in Pneumonia. A. Santini (Siena).—Sulla ipocloruria nella polmonite e sulla presenza del cloro organico nel tessuto. (Commenced in No. 18.)
77 (No. 20.) *Treatment of Hydatid Cysts in Liver with Sublimate. D. Pirrone.—La cura delle cisti di echinococci del fegato col metodo Baccelli.
78 Attempts at Chemical Anti-anthrax Vaccination. A. Paladino-Blandini.—Tentativi di vaccinazione chimica anti-carbonchiosa.
79 A proposito di una diagnosi di tumore addominale. G. Zagari.
80 (No. 21.) Bile Pigments in Icterus. L. Ferrannini.—Le proprietà e le trasformazioni dei pigmenti biliari nelle varie forme di ittero.
81 Gastric Functions in Splenectomized Animals. T. Silvestri.—La funzionalità gastrica negli animali smilzati.

75. **Spleen Abscess.**—The diagnosis is assured if a fluctuating tumor can be palpated under the costal arch, especially if accompanied by pyemic fever and local pains. To relieve the pain in the spleen the patients may assume a characteristic attitude, lying on the back with the left thigh flexed. The prognosis is grave, although recovery has followed prompt surgical intervention in some cases. In the typical one described the abscess was of tuberculous origin, as also the peribronchial and mesenteric glandular lesions. Less than a dozen cases are on record of abscess of the spleen, and only 3 recovered. Some were consecutive to typhoid or malaria, and one to articular rheumatism. Four of the patients were women.

76. **Retention of the Chlorids in Pneumonia.**—Santini called attention in 1902 to the hypochloruria observed in the course of pneumonia and has since established that it is a constant phenomenon in all acute infections. (The diagnostic importance of the retention of chlorids has recently been emphatically proclaimed from Senator's clinic, as quoted at length on page 140 of THE JOURNAL.) In a patient under observation for some time on account of mitral stenosis, the elimination of chlorids was constantly 8 to 10 gm. a day. An attack of pneumonia supervened, and the first day the chlorids were 9.41 gm., and the next, only 1.17 gm. In another patient the onset of an acute infection caused the chlorids to drop from 14.47 gm. the day before to 6.81 gm. the first, and 2.19 gm. the second day. In another patient two attacks of pneumonia occurred while under observation, and in both the same sudden drop in the chlorids was noted in twenty-four to forty-eight hours. From the clinical study of 50 patients with pneumonia he states that

this constant hypochloruria ranges from a daily minimum of .5 gm. to 6-7 gm., but does not seem to bear any relation to the extent of the pneumonic focus, nor the height of the fever. When salt is ingested by normal subjects the proportion eliminated in excess approximates the amount ingested, but this does not occur in case of hypochloruria. Even when a pneumonia patient took as much as 24 gm. of salt during the day, the percentage in the urine was only slightly increased, not at all in proportion to the quantity ingested. Santini concludes from his experiments and the arguments he presents that the quotient of the alkaline-mineral chlorid remains invariable in the tissues in pneumonia as in health, or may be a trifle lower in the former. During the infectious process the chlorin enters into combination with organic substances abnormally produced, and the product is impermeable for the kidneys. Even in physiologic conditions, while a constant proportion of the chlorin is found in the tissues in the form of an alkaline-mineral chlorid, another part is found in combination with organic principles. The retained chlorin can be readily found in the desiccated blood and tissues by mixing them with a 2.5 per cent. solution of caustic soda and setting aside for a time, occasionally shaking the vessel, then proceeding as usual for its determination.

77. **Treatment of Echinococcus Cysts in Liver with Injections of Sublimate.**—Pirrone gives the particulars of 3 cases of an echinococcus cyst in the liver completely and rapidly cured by aspiration of a small portion—about 10 c.c.—of the contents of the cyst, and injection through the needle before its removal of a smaller amount of a 1 per cent. solution of sublimate—about 2 c.c.—repeating the procedure in a week. Exploratory puncture and aspiration a month later were entirely negative, and the experiences in these cases have been duplicated in a large number of others. The conditions for success are that the contents of the cyst are sterile, that the cavity is single, that the lesion has not lasted so long that the walls of the cyst have become rigid and thus unable to retract, and lastly, that the cavity is not too extensive. It is important to apply a constricting bandage around the abdomen below the liver before making the puncture, and afterward to place an ice bag over the liver for twenty-four hours, withhold food for eighteen hours at least, and keep the patient immovable on his back in bed. The death of the parasites is indicated by leucocytosis in the fluid obtained by puncture and the presence of numerous hooks which become detached from the wall. The fluid first aspirated contains few, if any, of these hooklets. The liver is usually hypertrophied to compensate for the loss of the portion invaded by the cyst, and although not degenerated elsewhere, yet the organ generally remains enlarged after recovery. Pirrone styles this Baccelli method of treating echinococcus cysts "a positive and important conquest in the field of therapeutics." By removing only a small amount of the contents of the cyst the dangers from abrupt changes in pressure are avoided, and Nature attends to the gradual and safe absorption of the remainder as soon as the parasites are killed by the sublimate injection. The reaction is slight, possibly a little pain in the corresponding shoulder, and slight fever the day after the injection, not more than 38.5 C. The symptoms then all gradually subside.

The Public Service.

Army Changes.

Movements of Officers of the Medical Department, U. S. A., under orders from the Adjutant-General's Office, Washington, D. C., for the week ending Saturday, July 25, 1903:

Daywalt, George W., contract surgeon, is relieved from further duty at Fort Schuyler and from temporary duty at Fort Levett, and will proceed to Fort St. Philip for duty, to relieve Contract Surgeon Frederick Hadra, who will proceed to his home, San Antonio, Texas, for annulment of contract.

Gregory, Verdo B., contract surgeon, now at Vancouver Barracks, is relieved from further duty in the Department of the Columbia, and will proceed to his home, Bowers, Wis., for annulment of contract.

McCulloch, Jr., Champe C., captain and asst.-surgeon, is granted leave for ten days.

Roberts, William, first lieut. and asst.-surgeon, is relieved from treatment at the Army and Navy General Hospital, Hot Springs, Ark., and will return to his station at Fort Brady.

Reno, William W., first lieut. and asst.-surgeon, now at San Francisco, is relieved from further duty in the Division of the Philippines, and will proceed to Fort Crook for duty.

Winter, Francis A., captain and asst.-surgeon, is granted an extension of leave for twenty days.

Navy Changes.

Changes in the Medical Corps of the U. S. Navy for the week ending Aug. 1, 1903:

Medical Director M. H. Simons, commissioned medical director from June 9, 1903.

Drs. S. L. Scott, T. N. Pease and F. G. Abeken, appointed assistant surgeons from July 10, 1903.

Hospital Steward E. May, appointed pharmacist from March 28, 1903.

Hospital Steward T. N. Phillips, appointed pharmacist from June 8, 1903.

P. A. Surgeons E. M. Blackwell and G. F. Freeman, commissioned as such from June 7, 1903.

Asst.-Surgeon C. E. Ryder, ordered to the Naval Hospital, Chelsea, Mass.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, *Public Health* and Marine-Hospital Service, during the week ended Aug. 1, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, June 18-25, 4 cases.

California: Los Angeles, July 11-18, 1 case; San Francisco, July 12-19, 5 cases.

Illinois: Belleville, July 11-25, 3 cases; Chicago, July 15-25, 1 case, 1 death.

Indiana: Indianapolis, July 18-25, 1 death; South Bend, July 18-25, 1 case.

Louisiana: New Orleans, July 18-25, 3 cases.

Massachusetts: Fall River, July 18-25, 7 cases.

Michigan: Detroit, July 18-25, 6 cases, 3 deaths; Grand Rapids, July 18-25, 1 case; Port Huron, July 18-25, 2 cases.

Mississippi: Natchez, July 11-18, 1 case.

Missouri: St. Louis, July 18-25, 2 cases.

New Hampshire: Manchester, July 18-25, 5 cases.

New York: Rochester, July 14-21, 1 case.

Ohio: Cincinnati, July 17-24, 3 cases; Dayton, July 18-25, 5 cases; Toledo, July 18-25, 2 cases.

Pennsylvania: Norristown, July 18-25, 3 cases, imported from Philadelphia; Pittsburg, July 18-25, 14 cases, 6 deaths; Scranton, July 18-25, 2 cases, 1 death.

South Carolina: Charleston, July 18-25, 1 case; Greenville, July 11-18, 4 cases.

Utah: Salt Lake City, July 18-25, 2 cases.

Washington: Tacoma, July 13-20, 1 case.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, May 1-31, 11 deaths.

Austria: Prague, July 4-11, 5 cases.

Belgium: Antwerp, July 4-11, 3 cases, 3 deaths; Brussels, July 4-11, 3 deaths.

Brazil: Rio de Janeiro, June 14-28, 12 deaths.

China: Hongkong, May 31-June 13, 3 cases, 1 death.

Colombia: Bocas del Toro, July 7-14, 5 cases, 1 death.

France: Paris, June 27-July 4, 1 death.

Great Britain: Dublin, July 4-11, 5 cases; Dundee, July 6 13, 3 cases; Edinburgh, July 4-11, 1 case; Leeds, July 11-18, 6 cases; Liverpool, to July 18, 13 cases, 3 deaths; London, June 20-July 11, 42 cases; Manchester, July 4-11, 2 cases; Newcastle-on-Tyne, July 4-11, 1 case; Nottingham, July 4-11, 10 cases; Sheffield, July 11-18, 1 case.

Japan: Kobo, June 13-20, 1 death; Nagasaki, June 11-20, 1 case.

Mexico: City of Mexico, July 5-19, 31 cases, 25 deaths; Tampico, July 11-18, 2 cases; Vera Cruz, July 4-11, 1 case, imported.

Russia: Moscow, June 27-July 4, 5 cases, 4 deaths.

Turkey: Constantinople, July 5-12, 2 deaths.

Uruguay: Montevideo, May 31-June 20, 4 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, June 14-23, 4 deaths.

Costa Rica: Limon, July 8-16, 2 cases, 1 death.

Mexico: Altamira, July 14, present; Motzorongo, July 13, present; Progreso, July 12-19, 3 cases, 1 death; Tampico, July 11-18, 45 deaths; Tierra Blanca, July 13, present; Vera Cruz, July 11-18, 43 cases, 13 deaths; Zongolica, July 13, 5 cases.

CHOLERA.

China: Amoy, July 22, present; Hongkong, June 6-13, 1 death.

India: Calcutta, June 20-27, 30 deaths.

Straits Settlements: Singapore, June 6-13, 8 cases.

Turkey in Asia: Catana, May 24-June 6, 10 deaths; Damascus, June 6-20, 6 deaths in province; Luma, June 2, 2 deaths; Zibdani, May 31, 1 death.

PLAGUE—UNITED STATES.

California: San Francisco, June 15, 1 death.

PLAGUE—FOREIGN.

Africa: Cape Colony, May 31-June 6, 15 cases, 4 deaths; Natal, May 16-23, 2 cases.

Australia: Sydney, June 13, 1 case.

Brazil: Rio de Janeiro, June 14-20, 5 deaths.

China: Hongkong, May 31-June 13, 256 cases, 172 deaths.

Egypt: Alexandria, June 20-27, 5 cases, 4 deaths; Port Said, June 20-27, 2 cases, 1 death; other localities, June 20-27, 2 deaths.

India: Calcutta, June 20-27, 14 deaths; Karachi, June 14-28, 14 cases, 11 deaths.

New Caledonia: July 26, present.

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Original Articles.

THE APPARENT IMMUNIZING VALUE OF ATTENUATED TUBERCLE BACILLI.*

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WASHINGTON, D. C.

The recent attention which has been drawn to the difference in virulence of tubercle bacilli from various animals, and the publication by Behring of the production of immunity to tuberculosis in cattle by the use of tubercle bacilli of low virulence, have suggested that if perhaps a little more attention had been given to some work published in December, 1894, there would have been less tendency in some quarters, at any rate, to assume an absolute difference between tubercle bacilli obtained from men and those obtained from cattle. The published works of the writer and Dorset and Schroeder, Ravenel, Nocard and that of others, have shown so conclusively that it is possible to obtain tubercle bacilli, sometimes from the sputum of adults and frequently from intestinal lesions in children, which will produce tuberculosis in cattle when the latter are inoculated subcutaneously, that it seems now almost a waste of time to discuss a question which has been so positively proved. Considering further the numerous cases of accidental infection with bovine tuberculous material, and also that monkeys are more readily infected with bovine tuberculosis than with human tuberculosis, and it is well known that monkeys are more closely allied to man than any other animal, the possibility of the intercommunicability of bovine and human tuberculosis has been well established. The fact, further, that tubercle bacilli as well as other bacilli become more or less attenuated, depending on their growth on artificial media outside of the animal body or on their cultivation within the animal body, or in other words, the fact that they are easily influenced like other plants, by changes in soil and climate, has also been well proven by ourselves and others.

Our work, published in 1894,[1] was the first to show that guinea-pigs that had received large doses of attenuated human tubercle bacilli, those bacilli that had largely lost their virulence or power of producing disease, were rendered resistant and immune to subsequent inoculation with tuberculous material of bovine origin. Futher, in 1894-5-6-7-8, cattle and various other large and small animals were injected with frequent doses of attenuated tubercle bacilli and in some cases subsequently tested by inoculation with bovine tuberculous material. While the earlier works on the effect of large doses and the apparent immunizing value of attenuated human cultures on cattle were reported in 1896, Bulletin No. 13, Bureau of Animal Industry, and in the Proceedings of the Association of American Physicians, 1897, the results of the practical tests on some of these animals with tuberculous material have never been recorded, but may be of interest now. The practical treatment of these animals was made for me at the Experiment Station of the Bureau of Animal Industry by Dr. E. C. Schroeder.

In one of our earlier experiments begun in 1894, an old cow, 285, from a tuberculous herd, which on physical examination appeared to be clearly tuberculous, was given large injections of tuberculin, subcutaneously. The first dose used was 25 c.c. and the amounts were gradually increased so that between August, 1895, and October, 1897, when the animal was killed, it had received altogether 19,500 c.c. of tuberculin, as much as 1,500 c.c. being given at one dose. After four months' treatment with tuberculin the cow seemed to improve considerably. This apparent improvement, however, did not persist and the autopsy, when made in 1897, showed a most generalized tuberculosis, all stages of the disease being apparent. If the treatment with tuberculin had any beneficial effects the disease was so far advanced when the treatment was begun that no practical benefit could be secured.

IMMUNITY TESTS ON CATTLE.

On July 26, 1894, cow 217 received an injection in the jugular vein of 16 c.c. of a suspension of an attenuated human tubercle culture then in the 17th generation. This injection produced a large swelling at the seat of inoculation, but no other evidence of tuberculosis was noted.

On Nov. 28, 1894, this same animal received an abdominal injection of 6 c.c. of the 23d generation of attenuated culture. On Jan. 25, 1895, it received an intrathoracic injection of 6 c.c. of unfiltered culture of the 26th generation. On March 5, 1895, it received an injection into the right side of the chest of 16 c.c. of the 33d generation of a tubercle culture. Between April, 1895, and July, 1897, the animal received subcutaneous injections of attenuated tubercle culture, as much as 2,000 c.c. being given at a single injection. Altogether, therefore, it had received one intravenous, two intrathoracic, two abdominal and thirty-nine subcutaneous injections of attenuated tubercle culture. As the animal appeared to be in good health and well on Feb. 22,

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. L. Hektoen, F. B. Wynn and W. S. Hall.

[1] Medical News.

1898, it received an injection into the thoracic cavity of 10 c.c. of a turbid triturate of a tuberculous gland obtained from a cow. This gland contained many virulent bacilli, as proved by inoculation tests. On Sept. 20, 1898, this cow was killed, and postmortem examination showed it to be free from disease, indicating, therefore, that neither the attenuated human culture nor the bovine material had produced tuberculosis.

Another cow, 297, the offspring of the tuberculin cow just referred to, 285, was tested with tuberculin on Nov. 19 and 20, 1894, and found free from disease. On Nov. 24, 1894, it received an injection in the abdominal cavity of 6 c.c. of the 23d generation of a tubercle culture. The temperature as taken for ten days following the injection seemed to indicate no disease. Between Jan. 25, 1895, and July 25, 1895, it received five subcutaneous injections of attenuated tubercle culture, about 250 c.c. being given altogether. In August, 1895, it received an injection of a bovine culture. Beginning again Dec. 2, 1895, it received large subcutaneous injections of attenuated tubercle culture, about 13,500 c.c. of the material being given altogether. On Feb. 22, 1898, at the same time that 217 was inoculated, it received an intrathoracic injection of some of the same tuberculous material as that given to 217. Killed on Sept. 20, 1898, when apparently in good condition, the autopsy showed a few tubercular nodules in the udder, while the superficial lymph glands, liver, kidneys and spleen were normal. There were, however, some large tubercular masses on the pleura. The tubercular lesions appeared to have come from the first inoculation with bovine material.

In April, 1896, two calves were inoculated with smaller doses of attenuated tubercle culture, subcutaneously, two animals with serum from cow 285, which in its turn, as reported, had received large doses of tuberculin, and two animals were reserved as checks. These calves subsequently tested with bovine tuberculous material did not show the same amount of resistance as did those first inoculated. One of the calves which had received preventive inoculations of the serum from cow 285 seemed to possess immunity. So far as the records of the check inoculated with bovine material show (these latter records are unfortunately incomplete) the check contracted tuberculosis from which it died in September, 1896, while the preventively inoculated animals had shown considerable resistance. The established immunity was not as good as that obtained in the first experiments. In the first tests several intravenous inoculations, as well as subcutaneous, were made. In the second set only a small number of subcutaneous inoculations were made.

These experiments on cattle considered in connection with those on guinea-pigs showed that as it was possible to vaccinate against bovine tuberculosis by means of tubercle bacilli of human origin, then we are simply dealing with tubercle bacilli of varying degrees of virulence, and not tubercle bacilli that are really different from each other. The readiness, as we have shown, with which not only human but, as may be seen from the records attached, also bovine tubercle bacilli may be attenuated, and the ease with which, according to Nocard, avian tubercle bacilli may be converted into those of a mammalian character, all go to prove the intimate relationship of bacilli obtained from various sources.

Steer 242 was drenched with bovine tuberculous material on Jan. 10, 11, 13 and 21, 1902. On February 17, 18 and 26 of the same year, tested with tuberculin, a positive reaction was given. On October 6, about nine months after the first drenching, this animal was killed. A few small foci of a tuberculous character were found in the mediastinal and in the lymph glands at the entrance of the thorax; otherwise no evidence of tuberculosis.

On Nov. 2, 1901, bull 223 was inoculated subcutaneously with 10 c.c. of bovine culture No. 3 (Smith). On Jan. 21, 1902, and April 18, 1902, reactions after tuberculin injections were noted. On Oct. 2, 1902, when the animal was killed, its general condition was excellent. At the seat of inoculation there was a patch of induration about six inches in diameter in which were imbedded small abscesses containing a soft, cheesy material. The shoulder glands on the side of infection, both deep and superficial, were enlarged and sprinkled with necrotic foci. The mediastinal glands contained numerous necrotic foci. No other lesions of any kind were present.

This animal showed very much less tuberculosis than that found after six weeks in a calf which received, subcutaneously, injections of material from tuberculous cultures isolated from children. Compared with the record of another heifer, 284, which had been inoculated with a different virulent bovine culture (a culture that had been isolated from a spontaneous case of disease occurring at the Experiment Station), and which showed after eight weeks very generalized tuberculosis, it is very evident that the bovine germ by cultivation loses in violence and in ability to produce disease just as well as the human bacillus. It becomes attenuated. This is another strong point and emphasizes the influences of environment on the virulence of bovine as well as human bacilli.

Our earlier work and results in this connection have therefore simply been confirmed by the recent experiments of MacFadyean, Behring, Pearson and Gilliland and others.

DISCUSSION.

Dr. L. Hektoen, Chicago—Did I understand the author to mean by attenuated bacilli those that have been cultivated artificially for some considerable time?

Dr. M. Dorset, Washington, D. C.—This culture referred to is one which lost its virulence after having been cultivated for several years and one which will not kill guinea-pigs even in large doses.

Dr. Joseph McFarland, Philadelphia—Is that a peculiarity of this bacillus or is the same true of all bacilli? Do they all become attenuated?

Dr. M. Dorset, Washington, D. C.—This particular human culture is the most attenuated form we have. We have some human tubercle bacilli that have been growing for ten years without passage through an animal, and they are still quite virulent for guinea-pigs. This particular culture does seem to be an exception.

Dr. Victor C. Vaughan, Ann Arbor, Mich.—I would like to ask the gentlemen present if it has been their experience that tubercle bacilli become attenuated after having been grown for many generations?

Dr. Joseph McFarland, Philadelphia—I brought back with me from Berlin in 1895 a tubercle bacillus that had been isolated by Koch many years ago, and I kept it growing for more than five years. At the end of that time it seemed to have retained its virulence. I never went through any quantitative method of determining this, but relatively its virulence did not seem to be diminished. Unfortunately I lost the germ and could not continue the experiment.

Dr. Victor C. Vaughan, Ann Arbor, Mich.—In 1888, when I was a student in Koch's laboratory, Professor Fraenkel gave me a culture of the tubercle bacillus which he said was the

112th generation of one of the first cultures made by Professor Koch in 1882. I used that germ and its descendants in experiments on guinea-pigs and rabbits and it retained its virulence until about 1896. During the interval between 1888 and 1896 no year passed in which I did not inoculate animals with this germ, and in every case it was found to be virulent. In 1896 it began to lose its virulency for guinea-pigs, and soon ceased to have any effect even in large doses. Two years ago I sent to Dr. Lartigau a culture of this germ and a few weeks ago I had a letter from Dr. Baldwin of Saranac, saying that he had obtained the culture from Dr. Prudden and had experimented with it and that his experiments had confirmed my statements. The germ has completely lost its virulence so far as guinea-pigs were concerned.

NEW PHYSIOLOGIC APPARATUS.

THE FROG-BOARD MYOGRAPH AND THE MANOMETER TAMBOUR.*

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THE FROG-BOARD MYOGRAPH.

The term myograph was originally applied to the whole apparatus used in recording the contraction of a muscle. The pendulum myograph of Helmholtz included the muscle-clamp, the muscle-lever and the moving surface (pendulum) on which the myogram or muscle-tracing was recorded. After the rotating cylinder came into use as a recording surface under the name of the kymograph, the term myograph has been applied to that portion of the apparatus which represented the muscle-clamp and the lever with the load and the tracing point. Such an apparatus traces on the kymograph the muscle-curve or myogram.

The myograph has taken several forms: In the simple myograph of Helmholtz, in the muscle-signal of Du Bois Reymond, and in several other forms the muscle is exposed to the atmosphere. The changes wrought by the atmosphere soon put the muscle-nerve preparation into an abnormal condition and the responses to stimuli are not typical. In fact, the evaporation of moisture soon condenses the tissue-plasma sufficient to induce a typical "salt-tetanus." The application of normal saline solution can temporarily, but only temporarily, avert such a result.

To reduce to a minimum the effect of atmospheric changes the so-called "moist-chamber" was devised. This consists of a glass chamber which enclosed the muscle and nerve and the electrodes with the muscle clamp. A wire or thread passes through the bottom of the chamber to the tracing lever. The air in the chamber is kept saturated with moisture by a wet paper or sponge within. This device overcomes to a large extent the difficulties with which one must contend in attempting to work with the exposed muscle. There is one serious difficulty, however, which has not been mentioned and which is not corrected by the moist-chamber myograph, namely, the cutting off of the muscle from the blood and lymph circulation. In the classic method of making a muscle-nerve preparation from the gastrocnemius muscle and sciatic nerve of the frog, the muscle and nerve, with a portion of the femur, are completely removed from the frog's body, thus not only exposing them to atmospheric changes, but removing them completely from connection with the circulatory system.

For fundamental experiments on the elementary tissues, and for work with drugs in pharmacology, it is of very great importance to have a myograph that is simple and inexpensive and which does not involve disturbing the circulatory system. The importance of the last point can not be over-estimated. The circulatory system not only brings a continuous supply of nutriment and oxygen to the muscle, but carries from the muscle the accumulating products of fatigue and thus enables the muscle to do much more work than would otherwise be possible.

In pharmacologic experiments it enables the experimenter to watch the influence of drugs carried to the muscle in the normal way, rather than applied in some artificial and abnormal way.

The frog-board myograph is a new form of myograph so constructed as to permit all experiments usually performed on the gastrocnemius-sciatic preparation without exposing the active tissues to the atmosphere or disturbing the blood supply. The instrument is constructed as follows: An oaken base about one-fourth of an inch in thickness supports a cork plate of equal thickness; the cork plate presents a surface about 10 by 25 centimeters. (Fig. 1.) The lever holder at the end of the plate is constructed of thin sheet steel and slips from side to side in order to bring it opposite either leg of the frog.

The distance from the axis of the elbow-lever to the thread-eye is the same as that to the weight, therefore, the weight lifted by the muscle is the actual weight hung upon the weight link. When the lever passes a little below the horizontal position it comes into contact with the rest. This rest can be used in "after-loading" a muscle. For further description of the instrument, see the figure and its description.

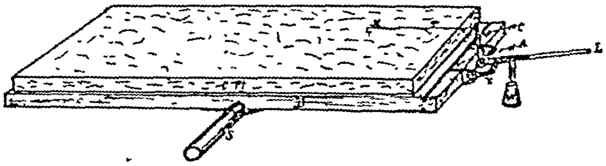

Fig. 1.—Frog-Board Myograph.

S, the shaft which is clamped to the upright stand; B, the oaken base; C. Pl, the cork plate to which the frog is fixed; A, the lever axis and slide lever-holder; W, the weight; L, the light lever about 20 cm. in length; H, the tendon hook which is joined through the thread T, which passed through the eye and under spring catch (c); R, the lever rest.

In the use of the frog-board myograph one proceeds as follows: The frog is pithed and pinned, dorsum up, on the cork-plate, with the feet at the lever end. The tendo-achillis is exposed and loosened from the tarsal ligaments, the tendon-hook (H) is passed through the tendon and the length of the thread adjusted at (c). The skin on the thigh is opened to the extent of two centimeters and the biceps femoris muscle removed, the sciatic nerve carefully separated from the sciatic artery and placed on the insulated electrodes. Stimulation may be made from time to time for a period of several hours before the preparation becomes exhausted.

SUMMARY.

1. The frog-board myograph is a convenient and inexpensive myograph especially adapted for work in general physiology and in pharmacology.

2. Its advantages over other similar instruments are as follows:

I. The muscle-nerve preparation can be made in at most one-fourth the time required for the classic preparation.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee.

II. The muscle and nerve are not exposed to atmospheric changes.

III. The circulation of the tissues is not disturbed. This has the advantage (1) of permitting the study of the action of drugs on muscle-tissue under normal conditions, (2) of studying fatigue without the accumulation of fatigue products under abnormal conditions.

THE MANOMETER TAMBOUR.

The second piece of apparatus to which I propose to call your attention is the manometer tambour (Fig. 2).

A very large number of research problems require the recording of blood pressure of the animal—rabbit or dog—under observation. In the physiologic or in pharmacologic laboratories where such observations are in progress almost daily, it is not difficult to get very satisfactory results with the classic apparatus, which consists of a mercury manometer whose proximal tube (p) is joined through the medium of pressure tubing (p t) to the canula (c), the pressure tubing being interposed at (T) by a T-tube, one limb of which passes to the reservoir containing a one-half saturated solution of $MgSO_4$ or some other agent for retarding coagulation. Into the distal limb of the manometer (d) there is fitted, in the classic apparatus, a float which rests on the mercury, following more or less accurately the variations in the level and carrying a vertical rod which slides through a guide in the upper end of the distal limb and bears at its upper extremity a horizontal reed, bearing at one end a tracing point.

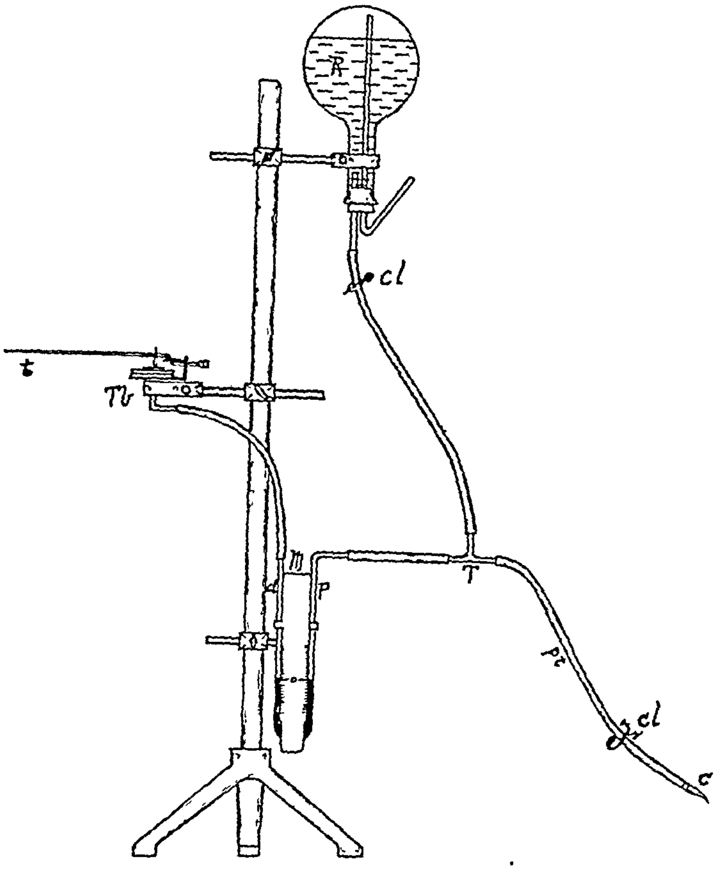

FIG 2.—THE MANOMETER-TAMBOUR.

M, manometer; Tb, tambour; R, reservoir filled with ½ sat. sol. $MgSO_4$; T, T-tube; Pt, pressure tube; Cl, clamp; C, canula; P, proximal limb of manometer; D, distal limb of manometer; T, tracing point of tambour lever.

There are two serious difficulties with this float. First, it is likely to fail to work properly just at the time when you are most anxious that there should be no hitch in your observation, though if the apparatus is in almost daily use this difficulty is not a serious one. The serious objection against the float is, that it does not follow accurately the movement of the mercury. The mercury starts up a little before the float does, and the float itself has so much inertia that the actual movements of the mercury are not shown at all by it. In order to overcome this difficulty, and to be able to record accurately the movements of the mercury meniscus, the following variation of the classic apparatus was contrived.

A small tambour was joined to the distal end of the manometer by a piece of pressure tubing and supplied with a very delicate tracing lever which magnifies the movements of the membrane 10 or 20 times, as desired, the levers being variable in the construction of the instrument. The surface of the tambour should not be larger than 15 mm. in diameter. The diameter of the mercury meniscus should probably be not less than 3 mm. in diameter. With this ration between the two surfaces and the levers multiplying 10 to 20 times, the most beautiful arterial pressure tracing can be obtained, showing not only the respiratory and percussion waves, but also the dicrotic wave clearly superimposed on each cardiac wave.

This apparatus, as above described, has one limitation which may, for certain kinds of work, seem to be a disadvantage. The pressure tubing leading from the distal end of the manometer to the tambour (Tb) is not attached to the manometer until after the rise of the mercury in the distal tube following the removal of the clamp (cl). After the tambour is attached to the manometer every movement of the mercury is shown by corresponding movements of the tracing point (t). Should there be a sudden rise or sudden fall of pressure, it will be instantly and clearly shown by corresponding rise or fall of the tracing. Should there, however, be a very gradual rise or a very gradual fall, owing to physiologic changes in the tonus of the blood vessels, for example, or perhaps by the gradual action of some drug on the animal under observation, this will not be shown by corresponding rise and fall of the tracing. It will, however, be shown by the stand of mercury in the distal limb of the manometer, and this may be easily read off or noted from time to time.

To offset this slight disadvantage, one has the two advantages above mentioned, namely, accuracy of the tracing of all the quicker movements of the mercury and the assurance that one's apparatus will always work.

PATHOLOGY AND CLINICAL HISTORY OF AMEBIC DYSENTERY.*

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PATHOLOGY.

The alterations found in the bodies of those dead of amebic dysentery vary greatly, depending on the time that the disease has existed, the extent of the intestinal lesions, and the complications that have arisen during the course of the malady—some lesions being always found, while others are encountered with greater or less frequency. Among the most common of these is emaciation, which, especially in chronic cases, is often extreme. On opening the abdominal cavity peritonitis is occasionally encountered, which may be very mild, and frequently extends but little beyond that portion of the membrane that surrounds the large gut, but in those cases where perforation has occurred a general suppuration of the entire cavity is found, except it be that adhesions of such a character have previously formed that the contents of the intestine are poured into a closed sac cut off from the general peritoneum; under such circumstances the condition is practically one of abscess formation. Though not invariably the case, the large gut is usually adherent to the coils of the small intestine or other viscera, and it is sometimes united to the walls of the abdomen by newly-formed bands of fibrous tissue; in some cases neighboring portions of the large intestine are united to each other. As a result of these adhesions the colon is often drawn from its normal position, and in some cases is greatly distorted. It is generally found that the walls of the gut are so thinned in places that it is only with the greatest care that it can be removed without being torn. On opening the intestine it is found that its coats are much thickened in some situations, and that on its surface there are numerous ulcers. The extent of the ulceration varies greatly in different cases, it being sometimes slight and confined to one portion of the gut, while in other instances the entire mucous surface of the viscus is denuded; it is, however, fortunately true that in fully half of the cases the lesions do not extend upward beyond the beginning of the transverse colon. The ulcers vary in size from those that are microscopic to others that cover a large portion of the mucous surface of the gut; as a rule, however, they are separated from each other by more or less normal mucous membrane. The edges of the ulcers are prominent and project above the general surface. The floors of these lesions are ashen-gray in color, and are almost always covered by a layer of mucus, in which there are particles of undigested food and masses of sloughing tissue; when examined under the microscope this mucus is found also to contain many swollen cells, leucocytes, amebæ and myriads of bacteria. The edges of the ulcers are practically all undermined, and not uncommonly, it is said, fistulous tracts connect them when near each other, though I have never myself been able to demonstrate this. These lesions may be rounded or irregularly shaped, but more commonly they are oblong, and lie transverse to the long axis of the intestine. It is rather curious that these portions of the gut that lie nearest the attachment of the mesocolon are, as a rule, but little affected. The mucosa between the ulcers is usually somewhat reddened, but it may appear entirely normal.

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

The intestinal lesions of this disease are almost always confined to the large gut, but now and then the process extends up into the small intestine for a short distance. I saw the appendix involved in one case; the small gut was also affected. It is remarkable that in cases where recovery occurs—even in instances where the disease was severe, and had existed for some time—the large intestine after a short time rarely shows macroscopic evidence of the pronounced ulceration that must have existed.

Our knowledge is very meager as to the exact nature of the finer alterations that occur in the intestine in the early stages of amebic dysentery in the human being, but the changes that take place in the large gut of the dog have been studied by several investigators. The sequence of events that occur in the puppy after having received an injection of material containing living amebæ seems to be briefly as follows:

Collections of amebæ occur on the mucous surface of the intestine, and quickly thereafter the epithelial cells on which these organisms lie exhibit catarrhal changes and drop off from their basement membranes; the blood vessels in the tissues below dilate, and the lymphatics become enormously distended with fluids. There is an increase in the number of lymphoid cells, and many of the large phagocytes of Metchnikoff collect in the part; simultaneously some of the dilated blood vessels burst, and we find as a consequence that there are many red and white cells in the affected area. Following this, the basement membrane on which the desquamated epithelial cells originally lay breaks down and disappears, and the blood that was free in the tissues at once finds its way to the surface and becomes mixed with the mucus and other materials present within the lumen of the gut. Necrotic changes in the tissue surrounding the crypts quickly follow, and these structures fall out, leaving ulcers that extend down to the muscularis mucosæ. The coat just named offers considerable resistance to the downward progress of the ulceration, but it eventually gives way, and the process passes into the submucosa. The tissues composing this coat in their turn undergo necrotic changes, which extend rapidly down to the circular muscular layer, and laterally in every direction. The walls of these ulcers are not made up of the pre-existing tissues of the part, but are composed of enormous collections of phagocytes of Metchnikoff, and red blood cells, with a smaller number of polymorphonuclear leucocytes and lymphoid cells, and a few plasma cells.

This brings us to the conditions practically always found in the human being dead of amebic dysentery. When we examine the intestine microscopically it is found that all of the characteristic lesions extend into the submucosa, though in rare instances superficial ulcers do occur, which, however, appear not to have any connection with the [illegible] process, and will therefore not be [illegible] cosa that lies at a short distance from the true ulcers, as a rule, shows astonishingly little change, but as the edges of the lesions are approached the cells lining the crypts often exhibit decided catarrhal change, and the blood vessels in the surrounding tissues are frequently considerably dilated. Amebæ are but seldom found either within the lumina of the glands or in the tissues that lie between them. At the edges of the ulcers the mucous coat generally terminates abruptly, but now and then this layer extends outward over the surface of the ulcer to a greater or less distance; this outgrowth of mucous tissue is composed mainly of deformed and only partially developed crypts that do not become attached to the underlying tissues; these bands are sometimes reflected back over the normal mucosa. In rare instances the process of healing over of the ulcers may be observed; this consists in the epithelial cells growing downward from the edges over the surfaces of the ulcers, and ultimately covering them with a single layer of cells, no new crypts being formed. The floors of the open ulcers are usually formed by one or the other of the muscular coats—generally the inner—though the necrotic process not uncommonly extends completely through these layers, and we find only the thickened peritoneum interposing between the abdominal cavity and the lumen of the intestine. Irrespective of the depth to which the ulceration has extended the surfaces of the lesions are always made up of partially necrotic tissue, in which there are multitudes of bacteria, many amebæ, and great numbers of cells. In these situations swollen bands of fibrous tissue that appear hyaline and take acid stains intensely are frequently found; they contain no recognizable nuclei. It is noteworthy that the elastic tissue fibrils are quite as well, if not better, preserved in these areas than the fibrous structures; this is exactly opposite to what occurs in the dog under similar circumstances, and may account for the great rapidity with which the tissues in these animals break down. Just beneath the surfaces of the ulcers the pre-existing tissues of the parts are found in varying stages of necrosis depending on the depth, and these structures are separated by accumulations of fluids between them and the presence of a vast number of cells; these consist of polymorphonuclear leucocytes, lymphocytes, plasma cells, connective tissue cells, mast cells and red-blood corpuscles. Amebæ are commonly present in these areas. The blood vessels are for the most part dilated and filled with blood; in many instances the vessels contain thrombi. The vessel walls are frequently necrotic, particularly on the side nearest the ulcers; amebæ are often found within their lumina. The lymph spaces and lymph channels are universally distended with fluids and cells. The epithelial cells that formally lined these vessels become greatly swollen, and almost without exception desquamate, and then lie loosely within the lumina of the vessel; mixed with these cells red blood corpuscles, leucocytes and amebæ are frequently found. Lower down in the walls of the gut these alterations become less pronounced, but the proximity of the pathologic process is usually evidenced by the presence here and there of small collections of lymphocytes, and great numbers of mast cells are scattered throughout the tissues. Newly formed masses of fibrous tissue are not uncommonly found at a considerable distance from the point of ulceration. Where the necrotic changes have passed through the muscular layers the subperitoneal coat is always greatly thickened, and the tissues composing it exhibit changes similar to those that have been described as occurring in the more superficial portions of the intestinal wall. While it is true that the amebæ, as a rule, are rather behind than in advance of the areas of greatest pathologic change, they are not uncommonly encountered at considerable distances from the edges of the ulcers. Under these circumstances I have been struck with the fact that they are usually acidophilic, and that their nuclei are not colored by basic dyes. Furthermore, numerous bacteria that stain well are found within them, and in many instances the parasites are undergoing disintegration, and the micro-organisms that they contain are being disseminated into the surrounding tissues. The changes that occur in the tissues at the lateral margins of the lesions resemble, on the whole, those that take place at their bases, with the exception only that the structures composing the submucosa are much more susceptible to the action of the poison of this disease than are those that make up the remaining coats of the intestine; this is strikingly shown by the resistance of the muscularis mucosa, which always projects out over the necrotic submucosa, and supports the overlying mucous coat. It is thus seen that the undermined edges of the ulcers in this, as in other intestinal diseases, are due to the power of the muscular coats to resist the poisons that produce the pathologic change. Fibrin is frequently present in the tissues of the submucosa in the neighborhood of the necrotic areas. In the lateral margins of the ulcers amebæ are numerously present, more so than in any other part of the intestinal walls; they lie in the necrotic structures, and somewhat within the tissues that are more or less normal, but do not penetrate very far as a rule. The changes in the tissues are always in advance of the great body of amebæ, this again clearly showing that if they be in reality the cause of the pathologic process they must necessarily act by producing some poison that is absorbed into the tissues. It is noteworthy that the lymph nodes that are present in the mucosa and submucosa show no marked increase in size, and exhibit, as a rule, but little alteration until the diseased process actually includes them, when they become necrotic and break down just as do the other structures.

Following acute amebic dysentery—and strangely enough appearing to develop only during the first few weeks of the disease—abscess of the liver may occur. These lesions may be situated in any part of the liver, and I do not think from a study of the literature that they are so strictly solitary as they are generally supposed to be, but miliary abscesses, such as occur in pyemia, very rarely take place. Any part of the liver may be involved, but the convex surface of the right lobe is most commonly affected. These abscesses, if not interfered with surgically, may rupture into the intestine or neighboring cavities, and may even open externally; there seems, however, to be a marked predisposition on their part to penetrate through the diaphragm and ultimately break into the lung. When this occurs an abscess of the lung develops, the contents of which eventually discharge through the bronchi. The contents of the liver abscess is made up of rather dark, pus-like material which on microscopic examination is found to consist of a very few cells, a great amount of granular debris, and numerous amebæ. Amebæ are always found in these abscesses—this being even the case in dogs where these lesions follow experimental dysentery. The walls of the liver abscesses may consist merely of disintegrating liver substance, or may be made up where the lesion has existed for some time, of a thick mass of fibrous tissue containing numerous lymphoid and plasma cells. It is noteworthy that the amebæ never penetrate into the walls of the liver abscesses, but are very frequently found just along the edges. The liver cells in the vicinity of the lesions show a very peculiar degenerative change which consists in the formation of nucleated bodies that bear considerable resemblance to amebæ. Bacteria are usually found in and around the walls of these abscesses. The blood vessels in the area surrounding the lesions usually contain no blood, but are filled with a granular detritus. In some instances areas of rhexis occur around the edges of the abscess.

It appears to me that there can be little doubt that the amebæ reach the liver by means of the portal circulation, though it has been assumed by some that the organisms get into the general peritoneal cavity, find their way to the liver, and burrow into its substance. The fact that amebæ are very frequently found within the blood vessels of the intestinal wall, even when no thrombosis exists, would seem to make it necessary that they would inevitably reach the liver substance.

SYMPTOMATOLOGY.

Amebic dysentery is a disease that frequently sets in acutely, but almost, if not quite, as commonly the beginning is gradual. In the former class of cases there is nothing in the symptoms at first that distinguishes the disease from the ordinary acute dysentery, which is so extremely common in the southern part of the United States in the spring and summer. In these instances the disease begins with diarrhea, quickly followed by stools of a dysenteric character; the patient complains of pain and tenesmus in the abdominal region, and there is at the same time a decided quickening of the pulse and some fever. In the course of a few days or weeks the severity of the symptoms usually somewhat subsides, but in exceptional instances the patient slowly grows worse, and death occurs in from two to three weeks. In those cases where improvement follows the acute onset the disease seems always to become chronic, and it is in this stage that the patient usually consults the physician. Where the disease begins gradually the sufferer is rarely able to state with definiteness the time when his trouble began; he remembers only that about a certain time he began to note that his bowels would be loose for a day or so, this being followed by constipation. There were a number of such periods of alternating constipation and looseness of the bowels, but it was observed that the period between the diarrheal attacks became less and less, until finally a condition was reached where there was several movements of the bowels in twenty-four hours. About this time the patient usually begins to observe that the stools contain some blood, and he has slight attacks of pain and tenesmus at the time that the bowels act. At the end of a few weeks the symptoms in every way resemble those that are encountered at an equal period of time from the onset in those instances where the disease began acutely. It is in this stage, after the malady becomes chronic, that it generally comes to the notice of the clinician, as in the class of persons who suffer from this affection a physician is very rarely called in merely for an acute attack of bowel trouble. After the disease becomes chronic it runs an extremely irregular course, sometimes getting well without any apparent cause in a comparatively short period of time, while in other instances it exists for many years. Some time ago Dr. Reginald Fitz of Boston wrote me that he had under his care a patient who had suffered with this malady since the Civil War, and I have myself seen many instances where the disease continued four, six and even eight years. Though somewhat arbitrary, for convenience sake, the affection may be clinically divided into several types, it being understood, however, that either of these may pass into the other at any time, and without any apparent cause:

1. *The Very Mild Form.*—The general health remains fairly good, there is no fever or acceleration of the pulse worthy of mention, and the appetite is good. The number of stools vary from two to six in twenty-four hours. This is the form almost always seen in children.

2. *The Moderately Severe Form.*—In this type of the disease the general health is never good, the appetite is, as a rule, poor, and there is considerable loss of flesh. The pulse is increased in frequency and the temperature goes up toward evening. The number of stools vary from six to twenty in twenty-four hours.

3. *The Very Severe Form.*—In this form of the disease there is great emaciation and loss of appetite, with sometimes nausea and vomiting. The temperature is irregular, but in the afternoon is usually above normal, and the pulse is weak and decidedly accelerated. The extremities are cold, and profuse sweating is quite common. Hiccough is frequent. The stools are watery, and consist very largely of blood and mucus, in which sloughs are sometimes found. The number of stools vary from twenty to fifty in twenty-four hours. It is very remarkable how patients may remain in a condition of this kind for days, and even weeks, and finally recover. It seems to be a peculiarity of all intestinal affections that death may be very closely approached without a fatal termination actually occurring.

There are very remarkable fluctuations in the severity of the symptoms in all forms of the malady, it being not an uncommon observation that the disease passes quickly from the mildest type to the most severe, and vice versa. While we can not always account for an increase in the severity of the clinical course of this affection, it is true that bodily exertion is often followed by a decided exacerbation in the symptoms, and the taking of certain articles of food that disagree with the sufferer frequently occasion distressing results; alcoholics seem to be especially badly borne—the taking of beer being particularly injurious.

Among the symptoms that are occasionally encountered may be mentioned a constant aching in the back that is not relieved by the recumbent posture, a tearing sensation in the region of the colon, great uneasiness in the stomach, and an urgent desire to defecate immediately following the taking of food and edema of the face and feet. In the mild form of the disease the urine is practically normal, but in the severer types albumin is occasionally present. I have examined repeatedly the urine of some of my worst cases for peptone by the method of Hoffmeister, with negative results. In the severer forms of the disease the chlorids are often diminished, and in the worst cases may be totally absent. Their reappearance after having been absent from the urine is a most favorable indication. In the milder forms of the disease the stools may appear almost normal in every way, but a careful inspection will usually reveal the presence of small particles of bloody mucus upon the surfaces of the fecal masses. In the severer types of the malady the movements contain considerable quantities of mucus and blood, and are quite soft in consistency. In the worst forms the fecal discharges consist almost entirely of blood and mucus; stools of this character, occurring in a chronic intestinal affection, I consider entirely characteristic, and even in the absence of a microscope I should feel but little hesitation in making a diagnosis of amebic dysentery. In some cases just before death the quantity of mucus becomes decidedly lessened, the stools consisting of an extremely thin, dark, blood-stained fluid. The feces are, as a rule, alkaline in reaction, but are occasionally slightly acid in mild cases. On microscopic examination the stools are found to consist of partially digested food, much mucus and blood, pus, large epithelioid cells, multitudes of bacteria, and varying numbers of amebæ. Cercomonas are sometimes encountered.

The most important of the complications of amebic dysentery is liver abscess; out of ninety-five cases this has occurred fifteen times—once in a boy. As has been before stated, this complication always arises during the acute period of the disease, there being no instance with which I am acquainted in which it occurred later. It appears to be more common in the northern portions of our country than in the south, as I myself have seen this in only two instances out of fifty-two cases. It is, however, quite likely that the proportion is greater than this, even here, as almost all of my cases were seen after the disease had become chronic. The symptoms of liver abscess are by no means always characteristic, there being many instances recorded where the disease lay latent for a considerable period of time without it being suspected. The usual symptoms are a throbbing or aching pain in the region of the liver, which may be reflected to the right shoulder, chills and fever of an irregular character, and rapidity of the pulse; the appetite fails, the tongue becomes coated, the patient rapidly loses flesh, and jaundice is occasionally encountered. On physical examination the liver is found to be enlarged; a fullness or marked protuberance sometimes develops at the lower margin of the ribs.

When the liver abscess opens into the lung, as it most frequently does, abscess of this organ develops. The symptoms of this condition are the usual signs of consolidation in the lung, with cough and the expectoration of a reddish-brown fluid, which on examination with the microscope is found to contain amebæ. This complication is rare, it having occurred in only three instances out of ninety-five cases of amebic dysentery.

Perforation of the intestine with peritonitis is an occasional complication of this disease; the symptoms are those that are usually observed in cases of this kind. It has appeared to me that the inflammatory phenomena are not so marked as in the septic peritonitis that follows operations.

Appendicitis has been observed in one case. The symptoms would naturally be those commonly observed where this organ becomes diseased, but in the instance to which I refer the clinical course was so mild that the true condition of affairs was not suspected during life.

A STUDY OF THE CASES OF AMEBIC DYSENTERY OCCURRING AT THE JOHNS HOPKINS HOSPITAL.*

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It is not the intention in this paper to attempt a complete historic account of amebic dysentery. I wish merely to recall the fact that it was Lösch,[1] of St. Petersburg, who in 1875 was the first to give an accurate description of amebæ in the stools of a dysenteric patient. Although Lambl and Cunningham had previously described amebæ in the stools of infants and cholera patients, it remained for Lösch to associate the amebæ with dysentery in the relation of cause to effect. It was also Lösch who gave to the organism the name *Amœba coli*, a name that is still in very general use. Kruse and Pasquale advocate the adoption of the term *Amœba dysenteriæ*, first suggested by Councilman and Lafleur, to designate the pathogenic ameba, reserving the name *Amœba coli* (Lösch) for the nonpathogenic ameba occasionally found in the normal healthy intestine. In America, amebæ were first found by Dr. Osler,[2] who observed them in 1890 in the pus of a liver abscess originating in Panama and operated on by Dr. Tiffany, of Baltimore. I purpose attempting to give as concise an account of the disease as possible, basing the description largely on our observation of the disease and its complications as seen at the Johns Hopkins Hospital.

RELATIVE FREQUENCY.

From May 15, 1889, the date of the opening of the Johns Hopkins Hospital, to May 1, 1903, or for a period of nearly fourteen years, there have been in all departments 120 cases of amebic infection. This was out of a total of 42,614 admissions to the institution. Of the 120 cases, 118 had been admitted to the medical wards. The total number of medical patients during this period was 15,817, so that the medical amebic cases constituted 0.74 per cent. of the total medical admissions. Of the two remaining cases, which were admitted to Prof. Halsted's surgical wards without having been medical cases before or after, one had an amebic abscess of the liver and the other an amebic abscess of the floor of the mouth. It may be safely said that these 120 cases represent pretty accurately practically all the cases of amebic infection that have been admitted to the hospital. It is doubtful whether very many have escaped observation. Since Dr. Osler's first observation, in 1890, and the appearance of Councilman and Lafleur's[3] classical monograph on the subject, in 1891, careful examination of the stools and contents of hepatic abscesses have been made in all suspicious cases. Excluding the case of abscess of the lower jaw containing amebæ, the remaining 119 cases were made up of amebic dysentery or amebic hepatic abscess cases. Only cases in which the histories positively state that amebæ were found are included in the series. Three cases in which a diagnosis of amebic dysentery was made, but in which there is no record in the history of amebæ having been found in the stools, have been omitted. These were in all likelihood actual amebic infections, however, the failure to note the presence of amebæ being an oversight. So also in connection with hepatic abscesses, only those in which there is a definite statement that amebæ were found in the contents of the abscess or in sections of the abscess wall have been included. Those in which no amebæ were found, but which proved sterile on bacteriologic examination (a fact pointing rather strongly toward an amebic origin), have been omitted.

ETIOLOGY.

After the discovery of *Bacillus dysenteriæ* (Shiga) as a cause of epidemic and sporadic dysentery, there was for some time considerable doubt expressed as to whether the *Amœba dysenteriæ* played such an important rôle in the causation of amebic dysentery. It was thought that possibly the intestinal ulceration was first started by the Shiga bacillus, and that the ameba was a later invader, and played a rather secondary rôle. Those who have had most experience with the dysentery bacillus, including Flexner among others, state that there is unquestionably a form of dysentery which is quite independent of that produced by that organism and actually due to the inroads of the *Amœba dysenteriæ*. We can again, therefore, use the term amebic dysentery with full confidence. The pathogenic agent is unquestionably the *Amœba dysenteriæ*.

This parasite is placed by Leuckart in the class *Rhizopoda* of the *Protozoa*. It is a unicellular organism, varying in size between 8 and 37 microns, according to Braun,[4] but usually between 12 and 26 microns, the average diameter being about 20 microns. Whereas in different cases the amebæ may vary greatly in size, in the same case they are usually of a fairly uniform dimension. The body of the ameba consists of two portions: the inner granular portion is called the endosarc or entoplasm; the outer, clearer, hyaline portion is termed the ectosarc or ectoplasm. The division into these two parts is not clearly made out in the resting stage, but becomes very distinct in the actively motile organisms. The greater part of the body of the cell is comprised of the finely or coarsely granular endosarc. This portion often contains several vacuoles of varying size. A nucleus can occasionally be made out in the fresh unstained ameba; more distinctly in the stained preparations. It averages about 6 microns in size, and is situated in the endosarc, near its border. A nucleolus can be recognized in the stained specimens. The ameba frequently contains foreign bodies. Red blood cells constitute one of the commonest inclusions. The number of red cells contained may reach as high as fifteen or twenty. Included red cells are apparently more numerout in acute cases. Micrococci, bacilli and granular debris are not infrequently seen within the body of the cell.

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[1] Lösch: Virchow's Archiv, Bd. lxv, 1875.

[2] Osler: Johns Hopkins Hospital Bulletin, vol. i, 1890.

[3] Councilman and Lafleur: Johns Hopkins Hospital Reports, vol. ii, 1891.

[4] Braun: Die Thierischen Parasiten des Menchen, Zweite Auflage, p. 44.

Probably the most striking thing about the *Amœba dysenteriæ* is its motility. This may present itself in two forms, either a change in shape or a change in place. The change in form is also of two kinds. A pseudopodium, consisting of a process from the hyaline ectosarc, may be seen to be protruded, and in a few minutes attracted into the body of the cell again. A more remarkable change in form is occasionally observed. This consists in the sudden throwing out of a process of the ectosarc, which instantaneously partially or completely encircles and envelopes the cell. The movements of locomotion are most interesting to watch. They seem almost purposive in their character. A hyaline process is thrown out from one border of the parasite, and the granular endosarc, with its inclusions, rapidly flows into the process. By the continual throwing out of a process from the same side of the cell an ameba in a very few seconds will cross the field of the microscope. In some of these very actively motile parasites it is almost impossible to differentiate ectosarc and endosarc, the ameba changing its place by a rapid rolling or flowing motion. In a general way, it may be stated that the more acute the course the more rapid seem to be the movements of the amebæ. When a satisfactory portion of mucus has been obtained, almost the entire field with the oil immersion lens may be seen to be comprised of very actively motile [illegible] Cold tends to retard the activity of the [illegible] they will remain fairly active, often for hours, at the room temperature. When the temperature falls below 75 F. the ameboid movements cease, but they may be again started by gently raising the heat to the body temperature by carefully warming the slide over a spirit lamp. With a warm stage, the amebæ will retain their motility almost indefinitely. The activity of the ameba is immediately arrested by a solution of quinin of the strength of 1 to 5000. During the process of death of the organism vacuolization of the cell occurs.

It is not known definitely how the ameba reproduces itself. By analogy, however, one is lead to assume that this takes place by fission or sporulation. The ameba is stained by various basic anilin dyes. The staining methods, which will not be given here, are not perfectly satisfactory, although there is no difficulty in recognizing the organism in stained sections of an intestinal ulcer or wall of an hepatic abscess. Mallory and Wright[5] advocate thionin as a differential stain. Their method aids very materially in differentiating amebæ in sections from mastzellen, with which they are liable to be mistaken. With their thionin stain the nuclei of the amebæ and the granules of the mastzellen are stained brownish-red; the nuclei of the mastzellen and of all other cells are stained blue.

Resistant forms of amebæ, similar to the gamete forms of the malarial parasite, have been noted by Cunningham, Grassi and Calandruccio, and by Quincke. These "encysted amebæ" are believed by these observers to be necessary, under certain conditions, for the transmission of the disease from one person to another.

The ameba is very difficult to cultivate. Kartulis used straw-infusion, and claimed to have been able to grow the parasite. Objections were later made to his technic, as it was believed that his positive results may have been due to accidental contamination. Celli and Fiocca[6] succeeded in obtaining pure cultures of the ameba. They describe two phases in the life cycle—the ameba form and the cyst form—and they state that the amebæ multiply by division.

(*a*) TYPES OF AMEBA FOUND IN THE STOOLS.

It is now well recognized that amebæ may occur in the stools of healthy persons or in the discharges of patients suffering from other diseases, without their having in these cases any pathogenic action. Thus they have been found in cases of chronic diarrhea, intestinal tuberculosis, typhoid fever, hemorrhoids, and other affections.

As a result of careful study of the amebæ found in the feces, supported by inoculation experiments, Quincke and Roos[7] have been led to the conclusion that there are three different varieties of amebæ in the stools of human individuals. The names which they give these different varieties, with their pathogenic actions, are as follows:

1. *Amœba intestini vulgaris,* 40 microns in diameter, coarsely granular, and not pathogenic to either human beings or cats.
2. *Amœba coli mitis,* the same size, pathogenic for man, but not for cats.
3. *Amœba coli* (Lösch) or *Amœba coli felis,* up to 25 microns in diameter; pathogenic for both man and cats, and producing dysentery in both.

It will be seen that the second variety, the *Amœba coli mitis,* which is pathogenic for man only, is much larger than the third variety, the ordinary *Amœba coli* (Lösch).

In our series of 119 cases of dysentery we have no positive evidence that we were dealing with any other than the usual *Amœba dysenteriæ.* In one or two cases, owing to the average diameter of the parasite found being rather smaller than that of the ordinary ameba, it was thought that we might be dealing with a special type of the parasite.

(*b*) DISTRIBUTION OF THE AMEBÆ IN THE HUMAN BODY.

The usual habitat for the *Amœba dysenteriæ* is in the large intestine. Where complications follow, it may be found in other situations. Thus it occurs in the contents of liver abscesses, in the sputum of patients with hepato-pulmonary abscess, and in the pleural and peritoneal cavities when a liver or pulmonary abscess breaks into one or other of these. Other situations in which amebæ have been found are as follows:

1. In the buccal cavity—the so-called *Amœba gingivalis* of Gros and *Amœba buccalis* of Sternberg. These forms were found in the tartar scraped from the teeth, and are regarded as being identical with the *Amœba dysenteriæ.*

2. In the urogenital tract. In 1889, Baelz described, under the name of *Amœba urogenitalis,* large, actively motile amebæ in the urine and vagina of a young woman, 23 years of age, who died of pulmonary tuberculosis. Other similar observations were reported.

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[5] Mallory and Wright: Pathological Technique, p. 293.

[6] Celli and Fiocca: Centralblatt f. Bakteriologie, vol. xv.

[7] Quincke and Roos: Berl. klin. Wochenschrift, Bd. xxx, 1893, p. 1089.

3. In pieces of necrotic bone. Kartulis observed amebæ in the pus from an area of necrosed bone involving the lower jaw of an Arab, aged 48.

4. In an abscess in the floor of the mouth. This observation was reported by Flexner.[8] The case occurred in Dr. Halsted's wards in the Johns Hopkins Hospital, and, as already stated, is the only one in this series of 120 cases that was not an amebic dysentery or amebic hepatic abscess case. The patient was a male, white, aged 62 years. The amebæ were obtained from the contents of the abscess at operation. Flexner believed that this form of the organism was closely allied to, if not identical with, the *Amœba dysenteriæ*.

(c) SOURCE OF THE AMEBÆ AND MODE OF INFECTION.

Very little is known regarding the source of the ameba and the mode of infection. We are still absolutely unfamiliar with the life history of the parasite outside the body. Inoculation experiments by way of the mouth, with the possible exception of those of Quincke and Roos, with the so-called encysted forms, have been entirely negative. It is highly probable that infection takes place by way of the gastro-intestinal tract, and that amebic dysentery is contracted in much the same way that typhoid fever is.

GENERAL ETIOLOGIC FACTORS.

(*a*) *Geographical Source of Infection in the Johns Hopkins Series.*—The term "tropical dysentery," for many years used almost synonymously for "amebic dysentery," has long been recognized as a misnomer. Amebic dysentery is not confined to the tropics, but often originates in the subtropical, even in the higher temperate zones. Sporadic cases occur in New England, and it will be remembered that last year Dr. Dock[9] reported before this Section a case which originated in Michigan. As the analysis of our cases shows, the disease occurs very frequently in Maryland and the bordering states. Of the 119 cases of amebic dysentery, the disease was apparently contracted in Baltimore in 83, and in the state of Maryland, outside of Baltimore, in 13 cases, or a total of 95 cases contracted within the state of Maryland; 2 in the District of Columbia; 8 in Virginia; 1 in West Virginia; 1 in North Carolina; 1 in Tennessee; 1 in Georgia; 1 in Alabama; 2 in Florida; 1 in Cuba; 1 in Brazil; 4 of doubtful source, the patients being sailors or travelers, and it being impossible to determine where the dysentery was contracted. It will thus be seen that the disease is very frequently contracted in latitudes as far north as Baltimore.

(*b*) *Age.*—The incidence of the disease in the various decades is shown by the following figures: There were 11 cases in the first decade; 8 in the second; 35 in the third; 29 in the fourth; 20 in the fifth; 11 in the sixth; 4 in the seventh; 1 in the eighth. It will be seen that the largest number of cases occurred in the third decade, 35 cases occurring betwen the ages of 21 and 30. The youngest patient was a *male child 2 years* 8 months old, and the oldest was a man 71 years of age. The analysis of the series regarding the question of age is of interest in showing the rather frequent occurrence of amebic dysentery in very young children. As stated, there were 11 cases, or 9.4 per cent. of the total, in the first decade, 6 occurring between the ages of 1 and 5, and 5 between 6 and 10 years. It should teach us to keep in mind the possibility that a chronic dysentery or diarrhea in young children may be of amebic origin. This fact was emphasized by Amberg[10] in a paper in which he reported five of the cases of amebic dysentery in children from Dr. Osler's wards.

(*c*) *Sex.*—There is much disparity in the relative prevalence of the disease in the two sexes, as illustrated by this series. There were 108 males and 11 females. It is possible that the out-door life of men render them more liable to infection, by drinking water containing amebæ or by conveying the parasite to their mouths on dirty hands.

(*d*) *Race.*—The series was composed of 107 white and 12 colored patients. Considering the fact that the proportion of whites to blacks in the hospital is about in the ratio of 7 to 1, it would appear that whites *are a trifle more frequently attacked*, as the proportion of whites to blacks affected was approximately 9 to 1.

(*e*) *Occupation.*—There was nothing in the consideration of the occupation of the patients to throw any special light on the source of infection.

CLINICAL TYPES.

Three groups of amebic dysentery may be made according to the severity of the intestinal symptoms. The cases may be classified as follows: 1. Dysentery of moderate intensity. 2. Grave or gangrenous dysentery. 3. Chronic dysentery. Owing to lack of time, and in order to avoid repetition, these three types will not be described separately. Moreover, the classification is a more or less arbitrary one, and cases may conform to one or other type at different periods. Thus a case of dysentery of moderate intensity may, and often does, become chronic, while a chronic case may take on acute manifestations and assume a gangrenous type.

SYMPTOMATOLOGY.

In many cases the onset is abrupt; in others it is more gradual. It is most acute in its onset in the gangrenous type, which is seen less frequently in the latitude of Baltimore than in the tropics. In the majority of cases the patient is rather suddenly seized with an attack of diarrhea. In a few hours, or a day or two, the dejections assume a dysenteric character, blood and mucus constituting the bulk of the movement. In the severest cases there may be as many as twenty or thirty such movements in the twenty-four hours. In the severe, acute gangrenous cases, large portions of sloughing mucous membrane may be passed. The appetite is impaired, and there may be nausea and vomiting in the initial stages. There is usually fever at the onset, the temperature ranging often betwen 100 and 102 F. When the cases become chronic the temperature may become subnormal. Frequently there is considerable abdominal pain and tenderness in the acute stages. The pain is most marked over the lower part of the abdomen, although it may be generally distributed. It is intermittent and of a colicky character, and usually is worse preceding the movements. In the chronic cases there may be no pain, excepting during the acute exacerbations. Tenesmus may occur, but it is rather the exception. This is explained by the fact that the lesions are usually most marked in the cecum and ascending colon, the rectum in the majority of cases being uninvolved, or only to a slight extent. The tenesmus in bacillary dysentery, on the other hand, occurs much more frequently, and is often very severe, owing to the rectum being usually much more extensively involved.

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[8] Flexner: Johns Hopkins Hospital Bulletin, vol. iii, 1892, p. 105.

[9] Dock: THE JOURNAL of the American Medical Asoociation, 1902.

[10] Amberg: Johns Hopkins Hospital Bulletin, vol. xii, December, 1901.

The degree of emaciation in some cases may be extreme, and is only surpassed by that observed in carcinoma of the esophagus. It is rather surprising, however, how little the general health of the hospital cases is affected in many instances, the color and general nutrition being extremely good. The majority of our cases were of moderate intensity, and in these the symptoms soon subsided under proper treatment. In a considerable percentage of cases the disease is subacute from the start, and gradually passes over into the chronic form. These cases are characterized by alternate attacks of diarrhea and constipation. In the periods of exacerbation the symptoms are rarely so severe as in the acute cases, and the diarrhea is usually readily amenable to treatment. These are the cases which are often so difficult to actually cure, and are the ones that so frequently apply for readmission to the hospital. Of our 119 cases, 19 were readmitted one or more times, with a relapse of the dysenteric symptoms. Of these, 12 were readmitted once; 14 twice; 1 three times, and 2 four times. One patient was admitted to the hospital five times in the short period of nine months; another was admitted five times during a period of one year and seven months. During the exacerbation there is pain, frequent passage of mucus and blood, and usually slight elevation of temperature. The patients, as a rule, do not feel very ill. Nutrition remains fairly good, and the marked emaciation usually observed in these chronic cases in the tropics was practically never seen in our hospital series. The numerous evacuations in these cases very frequently give way to constipation in a few days, when the patients are kept in bed and placed on bowel irrigations.

CHARACTER OF THE STOOLS.

As stated, in the earliest days of the attack the movements are very frequent in the severest cases—as many as twenty or thirty movements occurring in the twenty-four hours. These gradually diminish in number until, in fatal cases, there may be only three or four movements daily for the last few days preceding death. This diminution is in large part due to the gradual loss of expulsive power, brought about by the destruction of the muscular coat and the general edema of the bowel.

The earliest stools are small in amount; they consist, after the expulsion of the fecal contents, almost entirely of clear or slightly turbid and very viscid masses of blood-stained mucus, mixed with more or less bright blood. With the progress of the ulceration the stools become more copious, watery, and less homogeneous, and there is less blood. They contain, also, small, opaque or translucent, gelatinous, grayish-yellow masses, varying in size from a pin's head to a split-pea; these are fragments of necrotic tissue from the bases of the ulcers, and they contain amebæ. Where extensive and rapid sloughing occurs, the stools become greenish, grayish, reddish brown, or a mixture of these colors; their consistence is more watery, and they have a penetrating and horribly offensive odor. Not infrequently they contain large sloughs in the form of tough, stringy masses of a grayish or brownish color.

In cases of moderate severity with sudden onset the stools resemble those of the early stages of the grave form. The amount of blood and mucus is liable to be less. In the chronic form the stools are homogeneous, for the most part watery or like thin gruel, excepting during the periods of constipation, and of an earthy, yellowish-brown color. They contain fewer flakes of mucus and seldom any blood or necrotic fragments.

Microscopic Examination of the Bloody Mucus.—In the acute cases, besides the amebæ, whose characteristics have been already described, large numbers of red blood cells, few leucocytes, and a variable number of degenerated intestinal epithelial cells are seen. In a great many of our cases eosinophiles have been present in large numbers. They were found in the stools of all the five children with amebic dysentery reported from Dr. Osler's clinic by Amberg.[10] Charcot-Leyden crystals in rather small numbers are not infrequently present. They usually are most numerous where eosinophiles are present in large numbers. They occurred in four of Amberg's five cases. The stools also contain an innumerable variety of the ordinary intestinal bacteria.

Parasites Other Than the Ameba.—These are not infrequently associated with this organism in the stools. Ciliated infusoria—the *Trichomonas intestinalis* and *Cercomonas intestinalis*—are comparatively frequent associates. When they occur they are usually present in large numbers. One case in this series was of extraordinary interest in that, with the amebæ in the stools, there was also an intestinal infection with the *Strongyloides intestinalis.* This case was reported by Thayer, and is of particular interest in that it was the first case of so-called Cochin-China diarrhea or infection with the *Strongyloides intestinalis* observed in this country. The stools of this patient also contained large numbers of cercomonadids and trichomonadids.

CONDITION OF THE BLOOD.

Anemia of a mild secondary type usually exists, the reduction in the hemoglobin being more marked than that of the red corpuscles. At first thought it would seem natural to expect that with a chronic disease of this kind the red cells would be quite markedly reduced. This, however, was not found to be the case, the red cells, in fact, being nearly normal. In analyzing the blood counts in our records, I have for purposes of comparison kept the cases with amebic abscesses separate from the uncomplicated amebic dysentery cases. In the case of the red counts and the hemoglobin estimations, the averages were made from the first blood reports recorded in the histories after admission. In order to ascertain whether the leucocyte count was of any material value in determining the presence or not of an hepatic abscess, I have selected the highest leucocyte counts in both groups during their entire stay in the hospital. In many of the early cases no blood counts were made, while in the more recent cases in many instances a complete blood count was not made. This accounts for the averages of the red cells, leucocytes and hemoglobin being made from varying numbers of cases.

1. *Cases with Uncomplicated Amebic Dysentery.*—The average of the red cells in 38 cases was 4,802,000 per c.mm.; the average number of leucocytes in 43 cases was 10,600 per c.m.; and the average hemoglobin estimation in 36 cases was 63 per cent. In five cases the red cells were 6,000,000 per c.mm. or over. The comparatively high average of the red cells and the high count in these five cases are probably explained by a concentration of the blood resulting from the frequent bowel movements. It will be further seen that there was a considerable reduction in the hemoglobin and only a very slight leucocytosis. The average blood count then in the group was, red cells, 4,802,000; leucocytes, 10,600, and hemoglobin 63 per cent.

2. *Cases Complicated by Amebic Abscess of the Liver.*—The average number of red cells in 15 cases was 4,250,-

000; the average number of leucocytes in 15 cases was 18,350; and the average hemoglobin estimation in 13 cases was 66 per cent. The average blood count in this group was as follows: red cells, 4,250,000; leucocytes, 18,350, and hemoglobin 66 per cent. It will be seen that the red cells were only 750,000 lower than in the previous group. The leucocytosis was not a high one. The average was 7,750 higher than in the uncomplicated dysentery cases. There were two cases in which the highest count was under 10,000. The highest leucocytosis of all was 53,000.

Some observers hold that there is a great increase in the leucocytes in cases of amebic hepatic abscess and emphasize its importance in the diagnosis of such cases. Few, however, give counts supporting their statements. Although our series shows that the average leucocyte count in the amebic abscess cases is considerably above that in the uncomplicated cases, yet it is doubtful whether the leucocyte count is of any great value as a means of diagnosis. For instance, in the uncomplicated series there were ten cases in which the leucocyte count was above the average in the abscess cases. In two of these the counts were 40,000 and 47,000 respectively.

The average differential count of the leucocytes showed a relative increase in the polymorphonuclears. Considering the rather large number of eosinophiles seen in the stools in certain cases, it was thought that there might be some change in the relative percentage of these cells in the blood. With the object of determining whether there was such a change or not, Dr. McCrae made differential counts in a number of cases, but found the eosinophilic cells present in practically normal percentages.

COMPLICATIONS.

1. *Hepatic Abscess and Hepato-Pulmonary Abscess.*—Abscess of the liver is the most frequent and most serious of the complications of amebic dysentery. Of the 119 cases of amebic dysentery, 27, or 22.6 per cent., developed hepatic abscess. It is impossible to draw an accurate comparison between this percentage and the frequency of this complication in the extensive statistics of British and French physicians dealing with dysentery in India, owing to the lack of mention of the etiologic factor in the latter. In a hospital series, the percentage of hepatic abscess cases would probably be higher than would be the actual percentage outside hospitals, owing to the fact that the severity of the symptoms from this complication would cause the victim to seek admission, whereas the patient with dysentery alone would not be so likely to enter a hospital. There were 24 cases in males and 3 in females. According to decades, the cases occurred as follows: second, none; third, 10; fourth, 5; fifth, 7; sixth, 3, and seventh, 2. It will be seen that the largest number, 10, or 35.7 per cent. of the total cases, occurred between 21 and 30 years. The complication was also most frequent in this decade in Waring's more extensive statistics. Whether there were any special determining factors predisposing the patients to the development of this complication could not be ascertained. In one case direct traumatism in the hepatic region seemed a factor. The Anglo-Indian authorities lay great stress on the predisposing influences, particularly of alcohol, but also of condiments and high temperature.

Relationship to Onset of Dysentery.—The series was analyzed for the purpose of determining the length of time the dysentery had lasted before the symptoms of hepatic abscess manifested themselves. The result was as follows: In 3 cases there was no statement as to how long the dysentery had lasted. In 5, the intestinal manifestations had been so unimportant as to lead the patient to state on inquiry that he had not had diarrhea. Definite data are given in 19 other cases. In eight cases the dysentery had lasted one month or less. In one of these the dysentery and abscess symptoms had come on simultaneously, and in three others the dysentery had lasted only two weeks; in 1 case the dysentery had lasted two months; in 1, three months; in 2, four months; in 1, five months; in 2, six months; in 1, seven months; in 1, eight months; in 1, one year, and in 1, six years. The statement is sometimes made that hepatic abscess only develops in the very acute stages. The above analysis amply proves the contrary. It shows, however, that the largest number did develop within the first month after the onset of the dysentery. It must be emphasized that in one case the intestinal symptoms had lasted one year and in another case the remarkably long period of six years. Probably the most interesting fact of all is that in 5 cases the intestinal disturbance had not been sufficient to attract the patient's attention. In 22 of our 27 cases of hepatic abscess there was clinically or anatomically the existence of amebic dysentery, although in two of these cases there were only the scars of old ulcers. In two of the remaining five cases the intestine seemed normal at autopsy. This is an interesting fact, as it shows that the ulceration may be so slight as to cause no evidence after healing, and yet hepatic abscess may result in such cases. The other three cases were among those that recovered, and no history of dysentery had been obtained, amebæ being present, however.

Number of Abscesses.—The belief, formerly held, that amebic hepatic abscess is nearly always single, is no longer tenable. There may be only one large abscess, but not infrequently there are two or three fairly large abscesses, while, on the other hand, there may be thousands of minute abscesses, some almost indistinguishable to the naked eye. These minute abscesses have also been shown to contain amebæ. In 8 of the cases the abscesses were multiple. The most frequent situation for the single large abscess or for the multiple large abscesses is the upper and posterior part of the right lobe of the liver under the diaphragm. Autopsies were obtained in 22 of the 27 fatal cases of amebic dysentery. Eighteen of these cases were found to have hepatic abscesses. In 10 there was a single large abscess in the upper part of the right lobe.

Spontaneous Rupture of Abscess.—Amebic abscess of the liver may rupture spontaneously. In our series of 27 cases the abscess ruptured into the surrounding viscera or tissues as follows: Through the diaphragm, producing abscesses in the right lung or discharging themselves through the bronchi in 9 cases; into the right pleural cavity, causing an empyema in 3 cases—in one of these a pyo-pneumothorax was recognized clinically; into the duodenum in 1 case; into the inferior vena cava in 3 cases. In one case the abscess extended into the retroperitoneal tissues, involving the muscles of the back and the psoas muscle. In another an abscess in the lower part of the right lobe of the liver invaded the right kidney. This explained a hematuria that the patient had previous to admission. One of the cases was remarkable in that a large abscess in the upper part of the right lobe had entirely healed and had been replaced by a mass of dense fibrous tissue measuring about 3 cm. in diameter. This abscess had previously ruptured through the diaphragm into the lung, and the patient died from the effects of a large abscess in the lower lobe of the right lung, in which amebæ were found. The opening in the diaphragm was found entirely closed at autopsy. Seven of the abscesses were intact at the time of the autopsy. The series shows, what all statistics have, that the rupture is most frequently through the diaphragm into the lower lobe of the right lung with the establishment of an hepato-pulmonary abscess. The relatively large number of ruptures (three) into the inferior vena cava is of extreme interest. In one case, the inferior vena cava, beginning at a point just above the rupture, contained an organized, decolorized, firm thrombus, which extended upward and projected into the right auricle, which it nearly filled. In addition to the situations above noted where rupture may take place, the abscess may open into the pericardium, the stomach, bladder, colon, or small intestine, peritoneum, or through the skin in the right hypochondrium.

Symptoms of Hepatic Abscess.—The symptoms may be insidious in their onset, or they may be ushered in fairly abruptly. Pain is one of the earliest symptoms. At first it is usually dull and aching, later becoming lancinating and tearing in character. The former is due probably to stretching of the liver, while the latter is attributable to involvement of the peritoneum or pleura. The situation of the pain varies greatly. It may be in the epigastrium, right hypochondriac, lower right axillary, or scapular region. It is quite surprising the large number of our cases that have complained of pain in the region of the right shoulder-joint. This is a reflex pain through the phrenic, which receives large twigs from the fourth cervical. The fever which develops is at first usually of a continuous type; later it becomes remittent, and still later of an intermittent, septic type. At this stage chills are common, and the symptoms may simulate malaria. Profuse sweating is the rule. The pulse ranges between 100 and 140, and there is a certain amount of dyspnea, especially with any pleural or pulmonary involvement. There may be nausea and vomiting. Emaciation may be very marked. The patients have a sallow icteroid tint, and the conjunctivæ have a yellowish hue. The French think that there is something almost pathognomonic in the facial appearance of these cases. Marked jaundice is quite rare. As shown above, there is usually a moderate leucocytosis, the average in our cases being 18,300 per c.mm.

Physical examination may show some fullness in the epigastrium or right hypochondrium. There may be tenderness over the hepatic region, and if the abscess has attained considerable size the edge of the liver will be palpable. If the abscess be situated on the lower aspect of the right lobe or in the left lobe, its presence is more likely to be suspected early then when situated elsewhere. Percussion, when the abscess is of considerable dimensions, will nearly always reveal an increase in the area of hepatic flatness. Owing to the fact that the large abscesses are most frequently situated in the upper and posterior part of the right lobe, it will usually be found that the hepatic flatness will reach much higher than normal in the axillary line, and extending as high as, or higher than, the angle of the scapula. Auscultation may reveal nothing unusual. There may be an audible peritoneal rub over the liver, or, if the inflammatory trouble has extended through the diaphragm, there may be a pleuritic friction rub.

If the extension of the abscess upward be gradual, adhesions may take place betwen the visceral and diaphragmatic pleura, and the abscess may open directly into the lung, with the establishment of a hepato-pulmonary abscess. Rupture of the hepatic abscess into the lower lobe of the right lung took place in 9 of our 27 cases of hepatic abscess, or in 33.3 per cent. The invasion of the lung is usually ushered in by an aggravating cough of a convulsive character. The signs of involvement of the right lung are indicated by an increase in the area of dulness at the right base, feeble, tubular breathing and possible increase in the tactile fremitus. In the cases where the pulmonary abscess communicate with a bronchus, the most characteristic feature is the expectoration of a reddish-brown sputum described by Budd as having an "anchovy-sauce" appearance. The peculiar color of this expectoration is very characteristic. The contents of the hepatic abscess itself are not of this character, and the peculiar color is probably due to the admixture of the hepatic pus with blood as it passes through the lung. Microscopic examination of the expectoration will, on persistent search, practically always reveal the presence of amebæ. They were present in the sputum of all our cases. It further will show abundance of disintegrated pus cells, a few liver cells, some elastic tissue from the lung, hematoidin crystals, and occasionally Charcot-Leyden crystals. If the pulmonary abscess at intervals freely evacuates itself through the bronchus, the physical signs over the affected area may be those characteristic of a pulmonary cavity. The rupture of an hepatic abscess into the lung is usually followed by a decided diminution in the size of the liver as determined by palpation and percussion.

Bacterioscopic and Bacteriologic Examination of Hepatic Abscesses.—In all the cases but one, amebæ were found in the abscess contents. The exception was a case of healed hepatic abscess. Amebæ were found, however, in the pus of a lung abscess, from the effects of which the patient died. The statement that the hepatic abscesses are usually sterile requires to be modified. Not at all infrequently bacteria, in addition to amebæ, are also present. The bacteriologic study of our series of 27 cases gave the following results: The *Staphylococcus aureus* was found in 6; the *Bacillus coli communis* in 5, usually associated with other organisms; the *Streptococcus pyogenes* in 3, and the *Micrococcus lanceolatus* and *Bacillus pyocyaneus* in 1 each.

Avenues of Infection of the Liver.—Two views are held as to how the amebæ reach the liver. One view is that they migrate through the intestinal wall and enter the peritoneal cavity. Once reaching the peritoneum, they are supposed to pass toward the liver, the tissue of which they invade. Councilman and Lafluer considered this the likely mode of infection, and thought it amply explained the occurrence of the large abscesses in the upper part of the liver near the diaphragm, as well as of the multiple smaller superficial abscesses. In support of this view, Lafleur cites a case of dysentery in which a peritonitis existed with amebæ in the exudate over the intestinal coils and over the surface of the liver. Rogers,[11] who has made a study of amebic dysentery and hepatic abscess in India, believes that this is the method of infection in a good many cases.

The most rational theory, and the one that has the largest number of supporters, is that infection of the liver occurs by way of the portal vein. There is ample evidence in favor of this view. Dr. W. G. MacCallum, of the Johns Hopkins Hospital, in a verbal communication, informs me that in a number of recent cases he has found the amebæ in considerable numbers within the portal capillaries at the margins of the intestinal ulcers. Such a method of infection, it would seem, could alone explain the innumerable small abscesses scattered throughout the entire liver in many of the cases.

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[11] Rogers: British Journal, Sept 20, 1

2. *Amebic Empyema.*—In two cases the hepatic abscess ruptured directly into the right pleural cavity. In a third case, an amebic abscess of the lung ruptured into the right pleura, giving rise to a pyo-pneumothorax which was recognized clinically.

3. *Perforation of the Colon and Peritonitis.*—Just as in typhoid fever, the intestinal ulceration may become so deep that perforation of the colon eventually results. This occurred in three cases in our series. In one case the patient was operated on within three hours after the perforation occurred. He failed to recover, however.

4. *Intestinal Hemorrhage.*—At first thought it seems somewhat surprising that intestinal hemorrhage is not more frequent, considering the extent of the ulceration in the severest cases. It occurred in 3 cases in the series. Its infrequency is due to the fact that the vessels are thrombosed in the area of infiltration.

Other Associated Infections.—It is of considerable interest that the amebic dysentery was associated with another protozoan infection in a number of instances. Five of the patients also had malaria. Three of these were double tertian and two estivo-autumnal infections. Flexner[12] reported one of these cases and found in addition the *Bacillus coli communis* and the *Micrococcus lanceolatus* in the cultures from various organs. Another case was of extraordinary interest. The patient had suffered from dysentery for six years. On admission it was found that he was also suffering from typhoid fever, confirmed by a positive Widal reaction. The typhoid was complicated by a double thrombosis of the femoral veins. During convalescence he developed an amebic abscess of the liver for which he was operated on, with eventual recovery. One patient had pulmonary tuberculosis.

MORBID ANATOMY.

The intestinal inflammation and ulceration is confined almost exclusively to the large intestine. In 2 of our cases there was slight superficial ulceration in the last few centimeters of the small intestine.

The intestinal lesion consists of ulceration which has been preceded by infiltration of the submucosa due to an edematous condition and to multiplication of the fixed cells of the tissue. In the earliest stage these local infiltrations appear as hemispherical elevations above the general level of the mucosa. The mucous membrane over these soon becomes necrotic and is cast off, exposing the infiltrated submucous tissue as a grayish-yellow gelatinous mass, which at first forms the floor of the ulcer, but is subsequently cast off as a slough. The individual ulcers are round, oval or irregular, with infiltrated undermined edges. The visible aperture is often small compared with the loss of tissue beneath it, the ulcers undermining the mucosa, uniting and forming sinuous tracks bridged over by apparently normal mucous membrane. According to the stage at which the lesions are observed, the floor of the ulcer may be formed by the submucous, the muscular or the serous coat of the intestine. The ulceration may affect the whole or some portion only of the large intestine, particularly the cecum, the hepatic and sigmoid flexures and the rectum. In severe cases the whole of the intestine is much thickened and riddled with ulcers, with only here and there islands of intact mucous membrane. Healing takes place by the gradual formation of fibrous tissue in the floor and at the edges of the ulcers, which may eventually result in partial and irregular strictures of the bowel.

Microscopic Examination.—A notable absence of the products of purulent inflammation appears. In the infiltrated tissues polynuclear leucocytes are seldom found and never constitute purulent collections. Amebæ are found more or less abundantly in the tissues at the base of and around the ulcers, in the lymphatic spaces, and occasionally in the portal capillaries.

Two kinds of lesions occur in the liver. First there are local necroses in the parenchyma, scattered throughout the organ and possibly due to the action of chemical products of the amebæ. The abscesses, as already stated, are either multiple or single. Multiple abscesses are usually small and generally superficial. In an early stage they are grayish-yellow, with sharply defined contours, and contain a spongy necrotic material, with more or less fluid in its interstices. The larger abscesses have ragged necrotic walls, and contain a more or less viscid, greenish-yellow, or reddish-yellow purulent material mixed with blood and shreds of liver tissue. The older abscesses have fibrous walls of a dense almost cartilaginous toughness. A section of the abscess wall shows an inner necrotic zone, a middle zone in which there is a great proliferation of the connective tissue cells and compression and atrophy of the liver cells, and an outer zone of intense hyperemia. There is the same absence of purulent inflammation as in the intestine, except in those cases in which a secondary infection with pyogenic organisms has taken place. The material from the abscess cavity shows chiefly fatty and granular detritus, few cellular elements, and amebæ in variable numbers, which are also found in the abscess walls, chiefly in the inner necrotic zone. Very frequently the pus in the central part of the abscess contains no amebæ. These are found in gradually increasing numbers as the abscess wall is approached. The organisms remain at the margins of living tissue, where they can obtain oxygen, which seems essential for their existence.

DIAGNOSIS.

The diagnosis of amebic dysentery depends on the finding of actively motile amebæ in the stools. In the majority of cases the amebæ will be found in the first specimens examined. When the organisms are few in number, and particularly in the chronic cases during the periods of constipation, many examinations extending over days may be necessary before positive findings are made. It is important that the stool should be examined as soon as possible after being passed and while the feces are still warm. In order to prevent the feces from cooling off it is well to have the patient pass the stool into a warmed receptacle and then to immerse the latter in an outer basin containing warm water. Our routine method in the hospital wards, however, has been to secure perfectly fresh specimens of the intestinal contents by the introduction of the rectal tube. When the stools are fluid considerable quantities of fecal matter may be obtained, and when constipation exists small portions of mucus will be found in the lumen of the rectal tube from which preparations for microscopic examination may be made. In searching for amebæ the portions of the feces to be selected are the particles of blood-stained mucus and the small gelatinous masses consisting of necrotic intestinal mucosa. In examining the specimen microscopically, it is well to use the low power first. In this way the slide can be rapidly looked over and the amebæ will be recognized as larger and more refractile than the intestinal epithelial cells and leucocytes from which they have to be differentiated. Even the ameboid movement can be recognized with this power. When a suspicious looking field has been found the high power should then be used. A positive diagnosis of amebic dysentery should be made only when actively motile organisms have been found. When one finds large, round, non-motile bodies containing one or more red cells one can be reasonably certain that he is dealing with amebæ. A positive diagnosis, however, should be withheld until actively motile organisms are found, which result will almost surely follow in such cases if persistent faithful search be made. There is one type of degenerated epithelial cell which may give rise to confusion. This is an intestinal epithelial cell in which vascuolic degeneration is taking place. The vacuole gradually increases in size at the expense of the remainder of the cell and might be mistaken for the hyaline ectosarc of an ameba. It occupies usually one side and the nucleus is pushed to the other side of the cell. The absence of any ameboid movement should suffice to prevent misinterpretation of these cells. Swollen degenerated leucocytes should give no trouble. The monads are recognized by their peculiar movement and by their different morphology.

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[12] Flexner: Johns Hopkins Hospital Bulletin, vol. vii, 1896, p. 171.

When physical signs pointing to hepatic abscess develop in a case of amebic dysentery one naturally suspects that the abscess is of amebic origin. The question of the differential diagnosis between hepatic abscess, subphrenic abscess and pleurisy with effusion will not be considered here. The positive diagnosis of hepatic abscess will depend on the finding of motile amebæ in the contents of the abscess. In a large number of our cases of hepatic abscess contents were obtained for microscopic and bacteriologic examination by means of a long aspirating needle. While some objection to this procedure might be raised, we had no untoward results in any of our cases. The point of introduction of the needle, which should be 8 to 10 centimeters long, will depend upon the suspected position of the abscess. The procedure may be repeated a number of times if the first puncture is negative. The absence of amebæ in the contents does not prove that the abscess is not of amebic origin, for it is a frequent occurrence in cases operated on not to find amebæ until the abscess evacuates itself and until particles of the abscess wall appear on the dressings. The absence or partial absence of pus cells in the contents of an hepatic abscess is always suggestive of its being amebic in origin, because the ameba is not a great pus producer. The bulk of the contents consists largely of granular debris resulting from broken down liver cells. An amebic origin should always be suspected when the cultures prove negative. Amebic abscesses of the liver are not by any means always sterile, however, as has been already amply shown in this series.

When a patient with an hepatic abscess suddenly begins to expectorate quantities of sputum possessing a reddish-brown "anchovy-sauce" appearance, the establishment of an hepato-pulmonary abscess must be considered. The granular character of the pus on microscopic examination and the finding of liver cells and hematoidin crystals confirms this suspicion. Careful and persistent examinations of the sputum will nearly always reveal the presence of amebæ when the hepato-pulmonary abscess is of amebic origin. Amebæ were found in the sputum in all our nine cases in which this complication occurred.

After the discovery of *Bacillus dysenteriæ* some investigators were at first inclined to believe that this organism was the primary agent in setting up the intestinal inflammation and that the *Amœba dysenteriæ* was a secondary invader and of minor pathologic importance. These observers now credit the ameba with full powers to produce the lesions which are characteristic of amebic dysentery. The blood serum of nearly all the cases of amebic dysentery admitted to the Johns Hopkins Hospital during the last two years has been tested in order to ascertain whether it possessed any agglutinative action with the *Bacillus dysenteriæ* obtained from various sources. The test was invariably negative, thus tending to show that *Bacillus dysenteriæ* played no part in the production of the disease in our cases.

COURSE AND PROGNOSIS.

Any one seeing numerous cases of amebic dysentery learns to be guarded in his statements to the patient concerning the ultimate outcome of the disease. Tendency to a relapse of the dysenteric symptoms is one of the striking characteristics of the affection. In the majority of cases the dysentery yields fairly readily to absolute rest and intestinal medication in a very few days, and the bowels may become constipated and move only when the medicated irrigations are administered. The recurrence of the symptoms in patients discharged from the hospital apparently cured, is no doubt due to the failure of the intestinal irrigations to reach the living amebæ buried deep in the cells of the submucosa of the intestines. These organisms that survive eventually multiply in sufficient numbers to again set up the local intestinal ulceration with a consequent relapse of the symptoms.

That the disease is a grave one is amply illustrated by the mortality in the Johns Hopkins Hospital series. Of the 119 cases, 28 or 23.5 per cent. terminated fatally. Hepatic abscess is a very serious complication. Of the 27 cases with this complication 19 died. Five recovered after being operated on. Two of the 9 cases of hepato-pulmonary abscess left the hospital very much improved with good prospects of recovery, although their ultimate fate is not known. One case of abscess refused to remain in the hospital and was not treated. The seriousness of the hepatic abscess as a complication is further emphasized by the fact that the 5 recoveries after operation were out of a total of 17 cases operated on.

TREATMENT.

Until we know something definite of the life history of the ameba outside the human body it will be difficult to prescribe any adequate prophylactic line of treatment. Presumably, however, the same precautionary measures against typhoid infection, especially in connection with drinking water, will prove serviceable in this disease.

When the disease has actually established itself, the patient should be put to bed and kept absolutely quiet until the active symptoms have been controlled. The diet should be simple and easily digestible. A long list of medicines, administered by mouth, has been tried without satisfactory results. Even ipecac, formerly so strongly recommended in the tropics for the various forms of dysentery, has fallen largely into disuse. Local treatment gives the best results. Various astringent solutions have been advocated and may be tried. Large high irrigations of a solution of quinin have given the best results and this has been the routine treatment in our wards. The success of the treatment depends largely on the method of giving the irrigation. It must be remembered that the rectum in the majority of cases is not at all or only slightly involved and that the ulceration is most extensive in the cecal pouch and in the ascending colon. One must insure, then, the irrigation fluid reaching the upper part of the colon. This is best attained by having the patient's hips well elevated on firm pillows and to have him roll occasionally from his left to his right side. The same object may be secured by placing the patient in the knee-chest position. A liter of the quinin solution should be allowed to run into the colon twice daily. The strength of the solution at first should be 1-5000, gradually increasing it until it reaches 1-1000 or 1-500. In some cases we have given the patients at intervals an irrigation of a weak solution of hydrogen peroxid with apparent benefit. Colostomy has been recommended very highly by some in the intractable cases. It was only performed once in our series. The patient was almost moribund at the time of the operation and died shortly after.

Where the dysentery is complicated by hepatic abscess, the latter should be operated on at the earliest possible opportunity after a diagnosis has been established. Five of our 17 cases operated on recovered. While these results are fairly satisfactory they leave much to be desired. The earlier the operation the better the patient's prospects will be. The unsuccessful results after operation have, in many cases, been shown to be due to the fact that the abscesses are multiple and consequently only one abscess is evacuated, the others continuing to exert their injurious effects after operation. The operation is usually done in two stages in this hospital. The first operation is to promote shutting off the peritoneal or pleural cavities, depending on the seat of the incision. The second operation is for the evacuation of the abscess, and is performed a few days later. This delay, of course, is only permissible when the patient's condition will allow it. Rogers advocates very strongly a quinin solution of about 1 per cent. strength for irrigating out the abscess from time to time. He believes that the amebæ in the abscess wall are more quickly destroyed, thus allowing of a more rapid healing.

Where the abscess opens into the pleural cavity with the establishment of an empyema, free drainage must be established. When intestinal perforation occurs the experience with typhoid perforation in recent years leads one to hope that success might follow operation if performed very early.

SUMMARY.

In nearly fourteen years 120 cases of amebic infection have been admitted to the Johns Hopkins Hospital. Of these, 119 were cases of amebic dysentery or amebic abscess of the liver, the remaining case being one of amebic abscess of the floor of the mouth. Of the 120 cases 118 were admitted to the medical wards. During this time there were 15,817 medical admissions, the amebic dysentery cases constituting 0.74 per cent. of the cases. Of the 119 cases of dysentery, 82 were apparently contracted in Baltimore and 13 in the State of Maryland outside Baltimore, or a total of 95 cases within the borders of Maryland. The largest number of cases occurred in the third decade. The youngest patient was a child two years and eight months old, and the oldest a man of 71. A point of special interest is the comparatively large number of cases in children under 10 years. Eleven cases, or 9.4 per cent., occurred in the first decade, 6 of these belonging in the first hemi-decade. There were 108 males and 11 females. The series comprised 107 whites and 12 blacks, or a proportion of 9 to 1. The total ratio of whites to blacks in the hospital is about 7 to 1. A secondary anemia of moderate grade occurs. Occasionally there is a polycythemia. The average leucocyte count in the uncomplicated dysentery cases was 10,600. In the hepatic abscess cases it was 18,350. Hepatic abscess occurred in 27, or 22.6 per cent., of the cases. Nine of these ruptured into the right lung and 2 into the right pleura. Three opened into the inferior vena cava. In 10 cases there was a single large abscess in the upper part of the right lobe. In 8 cases there were multiple abscesses. Perforation of the colon with peritonitis occurred in 3 cases; and severe intestinal hemorrhage in 3 cases. Five cases were complicated by malaria; 1 by typhoid; 1 by pulmonary tuberculosis; and 1 by a strongyloides intestinalis infection. The agglutinative blood reaction with *Bacillus dysenteriæ* was negative in all cases tried. A marked feature of the disease is the great tendency to relapse. The mortality was high; 28, or 23.5 per cent., terminated fatally. Hepatic abscess is a serious complication, 19 of the 27 cases terminating fatally. Five were cured out of 17 operated on. Two of the hepato-pulmonary abscess cases were discharged very much improved. One abscess case did not remain to be treated. Quinin irrigations still seem to give the best results in the treatment of the dysentery.

THE TREATMENT OF ACUTE DYSENTERY.*

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The subject will be considered under three heads: 1. Regiminal Treatment; 2, Internal Remedies; 3, Topical Applications.

I. REGIMINAL TREATMENT.

The regiminal treatment, properly carried out in its various details, is potent to render the course of this affection distinctly milder and more favorable. Among the eminently important measures in bacillary dysentery I should regard rest in bed throughout the attack as deserving of a prominent place, and it should be rigidly enforced in all instances, not excepting the milder sporadic cases. As a means to conserve the bodily strength and energy, absolute repose is never uncertain in its effects; its extreme importance to the inflamed and ulcerated bowel, with a view to promoting resolution and the healing process, is universally acknowledged. The efficiency of rest in bed can be appreciably enhanced by constant, careful attention to the ventilation of the sick chamber. Fresh, pure air, without strong currents, is practically important as an aid in preventing the development of dangerous asthenia.

Too close attention to the diet and manner of feeding can not be paid. Certain dietetic principles need to be kept in view. For example, it must be recollected that concentrated, soft and liquid forms of food tend to favor constipation, whereas bulky, hard articles stimulate intestinal peristalsis.

Our aim in this disease is to minimize the intestinal contents, and thus, also, the amount of decomposable material that will reach the seat of the morbid changes. To reduce the putrefactive processes in the intestines, especially during the active period of acute bacillary dysentery, an absolute liquid diet composed principally of milk and albumin water, is a prime requisite. The milk should be predigested and given in small quantities, and the dejecta carefully scrutinized; and the appearance of food remnants in the feces is an indication either for further dietetic restriction or a change of pabulum. Dieting must be systematically conducted. When not objected to, the albumin water is admirably suited to this disease in the early acute stage. If carefully carried out, a milk diet, however, is attended with the least degree of intestinal putrefaction. Nothing is more pernicious in its effects upon the local lesions than to overburden the much-enfeebled digestive organs.

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It is doubtless true that the fats increase intestinal putrefaction, and must be allowed in relatively small amounts in this disease, if at all. This is probably also true of carbohydrates, although Bachman's experiments, contrary to the general teaching, show that they exert no marked influence on intestinal decomposition. Nutrients are of signal importance in supporting the vital powers, and may be preventive of dangerous asthenia. Finally, not all foods, even among the blandest and most nutritious forms, are equally well borne by the stomach, and several changes may be necessary during the course of a given case.

I have dwelt somewhat at length on the subject of diet in dysentery, believing that there is a lack of appreciation on the part of the general profession of its true value in the management of this disease.

Stimulants are required in the severer forms of endemic, and more especially epidemic, dysentery, to overcome the pronounced asthenic which often develops at a comparatively early period of the disease. Marked and even alarming circulatory enfeeblement may be met, and this calls for the free use of diffusible stimulants (e. g., champagne). In extreme adynamia, strychnin should be employed subcutaneously; and the timely, judicious employment of the normal saline solution is highly serviceable in similar cases. It has seemed to me that in our eagerness to find a special method of treatment (of which there are not a few from which to make a selection), agencies and elements whose efficiency has been satisfactorily demonstrated by the experience of by-gone generations of physicians, have been omitted from consideration in discussing the management of dysentery. An examination of the literature will confirm this opinion, so far as relates to the use of stimulants in this disease at least. The regimen, during the convalescing period, should receive much attention. Indiscretion in diet must be obviated; the too early use of fats, fruits and the coarser vegetables often cause a return of the dysenteric symptoms. The habits of the patient must be vigilantly looked after until full health is restored, and an abdominal bandage of wool is advised following an attack of dysentery, and may be warmly recommended.

The prophylactic measures applicable in the treatment of dysentery are much the same as those demanded by other micro-organismal diseases, notably typhoid fever, and need not be detailed here. Especial attention, however, should be paid to the disinfection of the excreta, while the drinking water must be both filtered and boiled. Unless a rigid system of disinfection of the stools be carried out during the prevalence of an epidemic, an infected individual contributes to the common source of contamination.

2. INTERNAL REMEDIES.

It is customary to speak of special methods of treatment by medicinal agents. This is unfortunate, since it tends to lead to neglect of other most important elements of the treatment. Pre-eminent among special drugs stands ipecacuanha, and although a most valuable agent in this disease, it can not be said to possess an abortive, or even curative, action; it is not a specific for dysentery. Says Hare:[1] "So far as we know, any influence which it possesses is brought about by reason of the fact that it tends to produce a rather profuse flow of bile in such patients, and the close connection which exists between the torpidity of the liver (to use a popular phrase) and congestion of this organ, with congestion of the colon, makes its employment under these circumstances more rational than would appear at first glance." Woodhull,[2] however, claims that "ipecac is not, as commonly supposed, a depressant or an evacuant, except in a secondary sense. Its primary action is that of a stimulant more directly of the organic nerve." He believes that this drug thus contracts the intestinal capillaries. Treatment, therefore, should be prompt.

R. Kobert[3] states that the antidysenteric action is supposed to reside in a glucocid, ipecacuanhic acid. It is probable that the use of ipecac has been less enthusiastically supported by clinicians in recent times than was formerly the case, because its mode of administration has not been of such character as to insure the highest efficacy of the drug. Kieffer[4] gives the following method, which has been adopted in tropical dysentery: "Nourishment of every description is withheld for three to four hours. Then 15 to 25 drops of tincture of opium are administered and a small sinapism applied to the epigastrium. In from twenty to thirty minutes, when the effect of the opium begins, from 30 to 60 grains of ipecac are administered in powdered form stirred up in one or two ounces of water. The patient lies on his back in bed with both eyes covered with damp, cool compresses. The pillow is removed. The patient is carefully enjoined to make no movement. If mucus gathers in the mouth and throat, a nurse, on sign from patient, removes it with a cloth or towel. If all these precautions are rigorously carried out, the patient retains the dose."

It requires at least two hours for ipecac to produce its effect. If it be vomited within an hour, the dose is repeated as soon as the nausea subsides. When all signs of nausea have disappeared the feedings are to be resumed. The next day repeat the dose of ipecac, diminishing it by 5 or 10 grains, and continue in this way for three or four days, using always the same precautions against vomiting. Kieffer feels that if administered in this way, ipecac will prove of value in the dysentery of the United States. Although aware of the fact that most authors recommend the massive dose, in my hands quarter-grain doses administered every half hour have in some cases seemed to be quite as effective, and in children the smaller doses are to be preferred. Strassberger[5] lauds ipecac highly in the treatment of the acute exacerbations of amebic dysentery, using one dram of the Rio article, with a full dose of opium, twice daily. The effect was prompt and permanent, and in only one instance did a real relapse occur. Upon further investigation and observation he found that while it may be a specific in amebic dysentery, it has little or no effect on the bacillary forms.

The use of saline laxatives in the treatment of dysentery is generally adopted. The best preparation is magnesium sulphate, which produces an eliminative effect, depletes the intestinal mucosa, and at the same time inhibits undue peristalsis. It is best administered in doses of one dram, diluted, every hour until free purgation is induced. This is followed by the generous exhibition of acid. aromat. sulphuric., which is given partly for its astringent effect and partly to render the intestinal contents acid. It has been shown by Cunningham of India, with reference to amebic dysentery, that if the contents of the intestines are alkaline, the amebæ thrive and multiply, while conversely, if the intestinal matter is rendered acid, their multiplication ceases for want of a suitable medium. The combined saline and acid method of treating dysentery rests on a most rational basis. I have, however, found and elsewhere expressed the opinion that if saline purgatives are employed at a late stage of the affection, or even after the full development of a given case, they are invariably attended with baneful effects. Richmond[6] also observes: "It is of the utmost importance that cases in which the sulphate of magnesium or sulphate of sodium should come under treatment early in the attack, before much ulceration has taken place, otherwise the septic absorption continues. In some cases treated by this method at Duelfontain, little or no improvement accrued, and the "patient died in a condition of toxemia, with rapid failing pulse, delirium and profuse diarrhea, with much painful tenesmus." Opium in some form, preferably as Dover powder, is promptly effectual in meeting certain leading systematic indications, as pain irritability, restlessness and undue peristalsis. For intensely distressing tenderness, either an opium suppository or laudanum by enema exercise a beneficial effect. The preparations of bismuth are valuable, particularly in the milder sporadic cases, and in the advanced stage of the severest forms; they may be advantageously combined with Dover powder and an antiseptic substance.

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[1] Proceedings of the Phila. Co. Med. Society, Sept., 1902, p. 51.
[2] Therapeutic Gazette, April 15, 1902.
[3] Ther. Monatsch., August, 1902.
[4] Tropical Dysentery, Philadelphia Med. Jour., Jan. 31, 1903.
[5] Münch. Med. Woch., Sept. 9, 1902.

Phelm,[7] who has had an extensive experience in the treatment of this disease in Africa, advises the successive use of purgatives, calomel and subnitrate of bismuth. A suspicion of dysentery calls for 30 grams of castor oil. If the case be one of dysentery, calomel is given after twelve to eighteen hours. At the end of three days, calomel is succeeded by bismuth subnitrate, which, in turn, is kept up for three or four days, or until the stools become solid again. It may be questioned whether any of the intestinal antiseptics exercise a potent influence; and it may be safely assumed that they are without the power to destroy the infecting micro-organism. The antiseptic care of the intestinal tract in bacillary dysentery, however, should be one of the aims of treatment, and guaiacol, salol and the preparations of naphthol are the agents of choice for this purpose. They may be combined either with the ipecac or salines, or with both. Richmond,[8] during an experience of the treatment of dysentery, found that none of the recognized methods were infallible, and the use of sulphur in the treatment of this complaint was suggested to him on the analogy of the treatment of anthrax by sulphur, as advocated by Mr. Arbuthnot Lane.[9] He had under his care in the Imperial Yeomanry Hospital at Pretoria, 20 acute cases and 10 cases of chronic diarrhea following attacks of acute dysentery. All the acute cases were treated with sulphur and Dover powder, and the chronic cases with sulphur alone, and in every instance a cure resulted. The ameba was carefully searched for in all of Richmond's cases, but was never found, and he believes it to be a justifiable speculation that the dysentery of South Africa was, like that of Japan and the Philippines, due to the Shiga bacillus. This observer prescribed 20 grains of sublimed sulphur combined with 5 grains of Dover powder four-hourly in the acute cases, and a like dose of sulphur alone in the chronic diarrhea resulting from acute attacks. The signal value of this remedy has been confirmed by the experience of other competent clinicians, both abroad and in this country. Although the exact mode of action of the sulphur is unknown, it is probable that the resulting sulphuretted hydrogen and sulphur acids inhibit the growth and propagation of the *Bacillus dysenteriæ*. Stengel has observed the same curative effect in amebic dysentery, and it is quite reasonable to suppose that the modus operandi of its action is similar in this form to that of bacillary dysentery. This remedy is strongly advised on theoretical grounds, and in view of the brilliant results already reported, is worthy of a more extended trial than has as yet been accorded it. It will probably be found to be best suited to protracted or chronic forms of the complaint. Dabney has pointed out the eminently important fact that the existence of certain complicating conditions, as malaria and various intestinal worms, may occasion non-success in attempts at treatment, unless recognized and met by the use of quinin or anthelmintics according to the given case. Failure of the ipecac treatment may also be due to the unreliability of its preparations.

Another method of treatment is by the use of antidysenteric serum. Gay[10] has prepared vaccines of uniform activity, and by means of which he could protect guinea-pigs from a multiple fatal dose of living dysentery bacilli, and also produce in the horse an active, immune serum. Gay thinks that a useful serum therapy of bacillary dysentery and of certain forms of the summer diarrheas in infants (the latter having recently been shown to be due to the *B. dysenteriæ*) is rendered highly promising. Shiga has successfully employed a serum which he himself has prepared. It is both protective and curative, but not as yet available for general use.

3. TREATMENT BY TOPICAL APPLICATIONS.

The treatment of dysentery by high intestinal irrigations is doubtless of value, but quite a few recent writers are not ardent advocates of the use of large enemata in acute bacillary dysentery, believing that they may cause atony and weakening of the coats. Astringent and antiseptic solutions are used for this purpose; they must be weak, otherwise the tormina and tenesmus—distressing features of the disease—will be materially increased. The method is better adopted to the more chronic forms of dysentery, the amebic variety in particular. In the latter, a warm solution of quinin (1-2,000, 50-5,000) is almost universally acknowledged to be more or less efficacious. It may be questioned, however, whether the amebic form is curable by known methods of treatment. In the milder forms of acute bacillary dysentery, copious enemata are unnecessary. If employed in this class of cases, the same precautionary measures must be taken as in the severe types of the disease.

Among the remedies thus employed are silver nitrate, strength of solution (gr. ss. to 1 ad ℥i); salicylic acid (1 to 2 per cent.); tannic acid (½ to 1 per cent.); zinc. sulpho-carbolate (gr. i-ii ad ℥i); and mercuric chlorid (1-6,000).

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[6] London Lancet, June 15, 1901.

[7] Deutsche Medicinische Wochenschrift.

[8] London Lancet.

[9] The Medical Week, Dec. 8, 1891.

[10] Univ. of Penna. Medical Bulletin, Nov., 1902.

It has been my custom to alternate an astringent and antiseptic solution, administering a copious clyster at twelve-hour intervals.

The mode of giving the irrigations is of vital importance. A fountain syringe should be employed, and as shown by the experiments of Hare and Martin; the pressure should never exceed two or three feet. Intestinal lavage must be a slow process in order to be successful, and to this end the flow should be interrupted at short intervals. The patient during the enemata should assume either the dorsal position or that on the left side, with the hips elevated; or if he be not too ill, he may be turned from side to side during its administration.

In conclusion, I would emphasize the fact that it is impossible to indicate a special mode of treatment that would be suitable for all cases of dysentery since each case, whether of the bacillary or amebic variety, presents certain individual peculiarities. The therapeutic measures must vary also with the particular stage of the affection and the previous condition of health of the patient.

DISCUSSION

ON PAPERS OF DRS. MASON, KNOX, BURNS, HARRIS, FUTCHER AND ANDERS.*

Dr. Alexander Lambert, New York—This is not a common disease in the North. Still, it is not uncommon among transients going through New York and who land in Bellevue Hospital. Some years ago I was surprised to find cases of amebic dysentery developing in people not 25 miles from New York: I have had four such cases in the past five or six years. It has been stated that liver abscesses were more frequent in the North than in the South. So far as a limited experience in a number of cases of amebic dysentery is concerned I have seen abscess develop in a large number.

I have found that high enemata given one week, and quinin the next week, and silver once or twice a day, have given me better results and quicker improvement than followed when I persisted in quinin or silver. In the more chronic cases I have given 1-500 bichlorid solution and run it down to 1-1000 with beneficial results. Salol and castor oil seem to give more satisfaction with some patients. Most of these cases have gone out of the hospital cured unless they died of liver abscess.

In all these cases of amebic dysentery there was one symptom that I have been unable to find mentioned in any textbook, viz., the severe amount of pain in the muscles at night; painful cramps in the muscles were found in every case of amebic dysentery. In the other cases of dysentery this was not complained of. I should like to hear from the Section on this symptom.

Dr. T. S. Dabney, New Orleans—At first I used sulphate of magnesia, but experience has taught me that sulphate of soda by reason of its action on the liver is far more efficacious. I also wish to state that the combination I use has a little morphin added, 1/6 to 1/32 of a grain to the dram; there is also dilute hydrochloric acid and peppermint water, and this combination acts well. If you take six cases of dysentery and use sulphate of soda in three, and sulphate of magnesia in the other three, you will not use sulphate of magnesia again. In conjunction I use acid drinks of dilute sulphuric acid, or nitrohydrochloric acid. All my patients drink this all the time. Experience has taught that the bacillus of dysentery seems to thrive poorly in acid and acid medium; it seems to require an alkaline medium, hence acidulated drinks inhibit the growth of this bacillus.

While in Colombia; South America, in the summer of 1892, I was asked by Dr. Angoula, a native Colombian physician, a close observer of the endemic diseases of his country, fo visit the village of Rio Frio, situated in the midst of vast banana haciendas, where a disease, characterized by severe intestinal hemorrhage, was at that time prevailing. In almost every thatched hut we found patients suffering from profuse bloody discharges at frequent intervals. A moderate amount of fever, but not much tormina or tenesmus was present. So great was the loss of blood that the patients seemed exsanguinated. On being asked by the Doctor for the diagnosis and treatment, I politely declined either, and remarked I was the student and he the teacher. His diagnosis was intestinal paludic fever and his routine treatment one gram of the sulphate of quinin dissolved in water acidulated with dilute sulphuric acid, this to be repeated every four hours until the character of the stools markedly changed. On our second visit, six hours later, we found the diagnosis verified by the treatment, for never in my professional life before had I seen such immediate and happy results follow so promptly on the administration of any remedy. I am inclined to believe the acid medium played an important part in the cure.

Dr. T. J. Moore, Galveston, Texas—I believe that there is not only amebic but also bacillary dysentery where I live. During the past four years we have carefully examined every malarial fever case, and, as a result, I am not ready to admit that we have malarial dysentery. I have treated during the past four years several hundred cases of malarial fever and associated with many there has been dysentery, but on closer investigation we have found, in probably all of them, some other cause for the dysentery than the malarial infection. I would rather regard dysentery as one of the symptoms of malarial fever seen occasionally. Hemoglobinuric types of fever with dysentery seem to be more common. We must admit that there is some gastrointestinal disturbances in many cases, but I am not ready at all to admit that we have malarial dysentery. Many cases of amebic dysentery get better on quinin and some better without quinin. During the past three years, at my suggestion, in the wards of the hospital we have been using the fluid extract of chaparro, a Mexican shrub. In the series of cases in which this drug was used, some ten or twenty, there was a rapid disappearance of the dysentery, and also of the amebæ from the stools. This drug is well worthy of trial.

Dr. Lambert has referred to cramps in the muscles of the arms and legs; this is especially true in the severe and acute cases where you find a great number of these amebæ, many containing red blood cells. In the severe cases the amebæ show a disposition to collect within themselves a large number of red blood cells. In the acute form there is another feature, the acute swelling of the mucous membrane which may cause a complete occlusion of the intestines.

Dr. Walter Shropshire, Yoakum, Texas—The cause of this disease has been to me an enigma for many years. Three years ago I had a case in a child nine months old. Severe symptoms were referable to the lower rectum and the disease progressed rapidly. An examination of the feces disclosed amebæ which contained red blood cells. Irrigation of the rectum and colon with quinin caused a disappearance of the ameba. When first examined I found the colon bacillus in large quantities. I called another physician in and he agreed with me in my diagnosis. The colon bacilli persisted, and the disease continued until the child began to vomit. In the vomit were found numbers of these bacilli, but no amebæ. At the autopsy, macroscopically, there was noted the characteristic undermining ulcers of the amebic dysentery. Further up in the tract were found bright red congestion of fresh inflammation. Microscopically there were found the same bacilli throughout the intestinal tract, in the mesenteric glands, liver and spleen. We then decided that this bacillus was the cause of the disease. Specimens were sent to Dr. Smith of Galveston, and he agreed that they were the colon bacilli, but said they were harmless in the intestinal tract. I am firmly convinced, though, that they were the cause of the disease. Since then I have not been able to discriminate between the two, Shiga's and the colon bacillus, and shall appreciate an accurate method of doing so.

Dr. Charles F. Mason, Ft. Sam Houston, Texas—A great many soldiers come to me after they have passed through several hospitals and after they have been recommended for discharge on account of disability; now, after a little experience with the following treatment, we find that these men can be much benefited. First, an anesthetic is given and the sphincter thoroughly dilated in order that a careful examination of the mucous membrane of the rectum can be made; almost always we find a little ulceration in the rectum within five or six inches from the sphincter. These ulcers are apt to be undermined, forming little pouches in the mucous membrane in which a probe can be introduced or hooked, and in which foreign matter as it comes down the bowel may gain entrance. Such ulcerations are treated by slitting them down to the bottom and curetting them or touching them with pure carbolic acid, or both. The bowel is then washed with a normal saline solution and the patient placed in bed and kept quiet on a liquid diet and preparations of milk. Irrigation with normal saline solution are used thereafter once or twice a day. Every case with one exception has been cured and returned to duty.

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* The papers of Drs. Mason and Burns appeared in The Journal, July 25: that of Dr. Knox, July 18.

Dr. J. H. M. Knox, Baltimore—The work was begun last summer at the Thomas Wilson Sanitarium with much skepticism as to the relationship of the Shiga bacillus to the diarrheal cases under treatment. The dysentery organism was isolated in case after case which seemed to be quite identical clinically with the several types of intestinal disorder in infancy which are grouped together as summer diarrhea. The claim is not made that every case of diarrhea in infancy is produced by this bacillus, but our experience at Baltimore last summer would certainly indicate that a large number at least of both the acute and chronic diarrheal disorders of infants are associated with *Bacillus dysenteriæ* (Shiga). It is to be emphasized that the isolation of this organism from the stools or intestinal tract requires some special skill and a bacteriologist well trained in other lines may easily overlook the specific bacillus, as indeed must have been repeatedly done.

It is to be hoped that during the coming summer a very large series of cases will be carefully studied in many localities that it may be determined to what extent the Shiga bacillus is responsible for the widespread infant epidemics which occur each summer. I should like to urge that all those who see these cases and have access to bacteriologic laboratories familiarize themselves with the special technic necessary in isolating the Shiga bacillus and then join in the effort to assist in the bacteriologic study of summer diarrhea. We shall be glad to send cultures from the sanitarium to any who wish to familiarize themselves with the organism.

Dr. Wm. Britt Burns, Memphis, Tenn.—I do not think we are any nearer a definite knowledge of the etiology of dysentery. I am aware that most all authorities at the present time do not agree that malaria has been a causative factor in dysentery. I am also aware that some cases of bacillary and amebic dysentery occur when in unison with the malarial parasite in the blood, but I do not find that those cases respond to treatment rapidly, and I do not believe that the ordinary bacillary and amebic dysentery would respond so readily to the treatment, as I have seen many cases do under the treatment ordinarily used in malarial disease.

Dr. H. F. Harris, Atlanta, Ga.—I wish to call attention to the treatment of amebic dysentery with hydrogen dioxid, concerning which, I observe, nothing so far has been said. When, in 1891, I saw my first case of this disease, I used the treatment first recommended by Loesch, and since lauded by various writers, which consists in injecting quinin solutions into the large intestine of those afflicted with the malady in question. Although the patient showed absolutely no improvement, I employed the same treatment in the next nine cases that came under my observation, and not in a single instance was there any appreciable effect produced. This led me to make some investigations as to the power of sulphate of quinin to kill the *Amœba coli*, and I was much astonished to find that this substance seemed to exert but little influence on these parasites. In one instance the amebæ remained alive at the temperature of the room for more than twenty-four hours in a supersaturated solution of this substance. It was thus clear that quinin sulphate could not be relied on to produce the death of the amebæ, particularly when they are embedded in the tissues, nor can this substance destroy the numerous bacteria that lie in and around the ulcers and are doubtless largely responsible for many phases of the clinical picture in this disease. Failing to get any results from the quinin injections, I tried almost everything that has been recommended in the treatment of chronic dysentery and never succeeded in securing results in any way satisfactory. Finally, at the suggestion of a student, I used daily injections of hydrogen dioxid, diluted with water from four to six times, with the result that there was an immediate and most striking amelioration of the symptoms in almost every instance—in every case, I believe, where the solution was brought in contact with the lesion. A remarkable result of this treatment is that blood is never seen in the stools after the first injection in instances where the medicament acts properly. The treatment is continued daily for a week, and after this the number of injections are gradually reduced in number until at the end of from four to six weeks no more are given. Especially at first the injection sometimes causes severe pain, and when this is the case it is well to administer morphin an hour before the treatment is given. It is absolutely necessary that the patient be placed on a strict milk and egg albumin diet, and that he should remain in bed for from two to four months. Occasionally patients recover when these precautions are not taken, but it is unusual. I have only seen muscular cramps in bad cases.

Dr. T. B. Futcher, Baltimore—I do not recall that any of our patients complained of muscular cramps. This symptom may occur in the southern states, where a severer type of the disease probably prevails.

We have to modify our views considerably concerning the bacteriology of the amebic hepatic abscesses. Cultures have shown that the abscesses are sterile in a much smaller percentage of cases than was formerly believed to be the case. The more frequent organisms are the *Staphylococcus pyogenes aureus* and the *Bacillus coli communis*. The *Streptococcus pyogenes* was present in three of our cases and the *Micrococcus lanceolatus* and *Bacillus pyocyaneus* once each.

In the line of treatment quinin irrigations yielded the best results. The success of this treatment depends largely on the way the irrigations are given. The object sought for is the assurance that the quinin solution reaches the cecum and ascending colon, where the ulcerations are most extensive. The relapses are due to the failure of the drug to reach the amebæ buried in the deeper layers of the submucosa. In one case an infusion of a Mexican herb which had been sent us was tried with fairly satisfactory results.

Dr. James M. Anders, Philadelphia—It is probably advisable to reiterate the importance of the benefit to be derived from absolute rest until all of the acute symptoms have subsided, whether for a shorter or longer period. The question of diet in this disease is one to which too little attention has been paid. I believe that ipecacuanha is the best single remedy for treatment of this disease, but it is not a specific, and not all patients can take massive doses. One-fourth to one-half grain doses at short intervals will give excellent results in many cases. Saline treatment should not be employed in advanced cases, but only when the patients come under observation early; as the result of a considerable experience with this method I find that if employed in the advanced stages of dysentery it aggravates rather than benefits the condition. The sulphur treatment should especially be given a trial in those cases in which ipecacuanha fails. This agent seems to be well adapted for the subacute or chronic forms; better than to the acute, bacillary form of the disease.

Cathell on Medical Societies.—Independently of the benefits and improvements accruing to the members of medical societies individually, they give a sound and healthy tone to the entire profession, stimulate the growth of medical science, and also generate and keep alive a genuine professional and brotherly spirit that tends to minimize all that is unprofessional.—Cathell.

RECENT INVESTIGATIONS BEARING ON INFECTIOUS DISEASES OF UNKNOWN ETIOLOGY.

LUDVIG HEKTOEN, M.D.
CHICAGO.

(Concluded from p. 409.)

Bacteriologic and microscopic examination of the blood has given no constant results. Nevertheless the injection of a few drops of blood invariably causes death in two or three days. Indeed, the mere insertion of a needle into the blood suffices to carry over sufficient virus to cause death. Fatal infection by way of the stomach follows the mixing of a few drops of blood with the food, and the clearest serum is as infectious as the whole blood. By inoculating a series of animals, one from another, Centanni shows that it does not concern a toxin or enzyme, but a viable virus capable of endless reproduction. He further found that the infectious agent passes through Berkefeld and Chamberland (F) filters in virulent form. Maggiora and Valenti find that the Chamberland filter K under a pressure of 1½ atmospheres holds back the infectious agent.

Lode and Gruber made the observation, confirming it by frequent repetition, that the specific cause, whatever its nature may be, passes through Berkefeld and Chamberland filters. Successive inoculation through a series of animals convinced them also that the cause is one capable of multiplication. Hence the disease is the result of the infection. In a subsequent article Lode states that the filtrates of Chamberland (kind of cylinder not stated) and Hauser filters were not definitely infectious and that the Pukall filter gave uncertain results. Berkefeld filtrates, however, were always as virulent as the unfiltered material.

As stated, culture experiments have not been successful. Various methods have been employed, including Nocard and Roux's intra-abdominal collodion sacs (Centanni).

Spontaneous infection of eggs does not seem to occur. The feces are probably not infectious in the most acute cases, but may be so in the subacute. Maggiora and Valenti declare that the secretions of the nose and pharynx are very virulent in the diphtheroid form of the disease. The exact manner in which spontaneous infection takes place is not clear, but Centanni is inclined to exclude air, dust and insects from the list of possible modes of infection.

While many birds are susceptible to the disease, rabbits and dogs appear to be immune. Young pigeons develop a peculiar labyrinthine vertigo, the semi-circular canals showing inflammatory changes, tending to sclerosis, and designated by Centanni as semicirculitis specifica.

Centanni found that the virus resists the temperature of the incubator (37.5), but heating to 60 C. for one hour destroys the infectiousness of virulent blood. Drying also destroys the virulence, but in tubes closed by melting the ends blood may remain virulent for a long time. The usual disinfectants destroy the virus quickly.

Lode states that decomposition and the admixture of various organisms destroy the virus with marked promptness, but it may remain active for twenty to thirty-three days in the unopened bodies of dead chickens, and dried material from the liver, spleen and brain remains virulent for about four weeks. Sterile filtrates remain active for several days. He finds that heating to 80 C. for thirty minutes destroys the virulence, but that strong sunlight playing directly on the dried infectious material did not render it harmless. Successful efforts to obtain immunity have not been made as yet.

The disease that Maggiora and Valenti had occasion to study corresponded closely to the clinical and anatomical descriptions by Perroncito and Rivolta of the disease named by them exudative typhus, which name Maggiora and Valenti believe ought to be retained. They show that dilutions of the blood up to 1 to 500,000 cause death in doses of 4 c.c. injected intraperitoneally. In the case of filtrates of blood emulsions 4 c.c. of a dilution of 1 to 160 represented the smallest fatal dose. Blood and exudates removed immediately after death or during the last moments of life remained virulent for forty-five days preserved in Pasteur pipettes in the dark. The meat of diseased fowls is probably not dangerous for man, but Maggiora and Valenti assume a conservative attitude in regard to this part. The virus in the epidemic studied by Maggiora and Valenti is, therefore, similar in most respects to that studied by Centanni, but the latter proved pathogenic for ducks and pigeons (Tauben), whereas the former proved harmless for these animals.

Albert Dubois[16] has observed a similar disease quite as fatal in Belgium, the infection being introduced with chickens imported from Italy. Filtrates of emulsions of the liver passed through Chamberland bougies proved virulent in a high degree.

Maggiora and Valenti[17] describe recently an infectious disease of birds (Turdus merles) caused by a microbe that passes Berkefeld filters.

7. *Rinderpest.*—Nicolle and Adile Bey[18] show that the virus of cattle pest ("peste bovine," "Rinderpest") sometimes passes through filters that are ordinarily considered bacteria-proof and sometimes not. This disease is caused by an as yet unknown virus, unknown either because invisible or incultivable, or both, by means of our present methods. Its variable behavior in regard to filtration is explained in part by the kind of filter used. Berkefeld filters are more permeable than the Chamberland filters, and of the latter the cylinder F is more porous than cylinder B. Again, the character of the fluid containing the virus plays a part. Thus a serous fluid appears to hinder the passage of the virus (shown by Nocard and Roux to be true also in the case of peripneumonia) and dilution of such fluid appears to reduce so materially the virulence of the virus as to explain the harmlessness of resulting filtrates. For control of the results of filtration of unknown virus and their significance these authors recommend the use of hydrant water, which they say commonly contains vibrios that have the power of passing through many filters. There are certain facts that indicate that the virus of bovine pest may occur within leucocytes: The blood of infected animals is the most virulent of all fluids in their bodies, and Kolle has shown that the virus is carried down by centrifugalization of both laked and unlaked blood. In blood laked by means of distilled water the leucocytes are regarded as the only elements that escape destruction. The absence of local lesions at the site of injection is also in harmony with the idea that the virus is intraleucocytic. And if the virus is contained within leucocytes it is easy to understand why it does not pass through filters freely and regularly.

8. *Sheep Pox.*—Borrel[19] finds that the virus of clavelée, a pustular disease of sheep not unlike smallpox, and

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[16] Compt. rend. de Soc. de Biol., 1902, liv, 1162-1163.
[17] Mem. de R. Accad. in Modena, 1902, iv.
[18] Ann. de l'Inst. Pasteur, 1902, xv, 57.
[19] Compt. rend. de Soc. de Biol., 1902, liv, 59 61.

characterized by lesions of the skin, passes through Berkefeld filters, the filtrate being sterile when inoculated in broth, but virulent to sheep. He found, further, that the virus passes through bougie F4 and F5 of the Chamberland filter, but not through bougie F. Borrel regards the inclusions described by Bosc within cells in the cutaneous pustules and in cellular foci in internal organs in clavelée as leucocytes, and he holds, further, that the filterability of the virus is not in accord with the protozoan theory of this eruptive disease. The fact that the virus passes through filters can not, however, be regarded as conclusive proof that the inclusions are not protozoan in character, because it is possible that spore forms may be so minute as to be filterable.

Borrel[20] further points out that water vibrios sometimes pass through filters, especially when the process of filtration is prolonged. Some of these organisms are so minute as to reach the limits of the visible. He also points out that it may take several days at the room temperature before the filtrates are rendered turbid by these water organisms, subcultures in bouillon remaining sterile. Borrel notes further that protozoön, *Micromonas mesnili*, once passed a Chamberland filter.

9. *"Mosaic Disease" of Tobacco.*—Beijerinck[21] has studied the virus of an economically important disease of the tobacco plant ("Mosaik s. Fleckenkrankheit"), marked by decolorization and necrosis of the leaves. This disease is contagious, and is caused by an interesting, filterable virus that can not be seen or cultivated in the usual way. It remains virulent for six months after heating to 70 C. According to Ivanowski,[22] diseased leaves remain infectious after conservation for several months in 95 per cent. alcohol. In discussing the question whether this virus is corpuscular or dissolved ("contagium vivum fluidum"), Beijerinck seems to conclude that it is dissolved and fluid because when infectious material is deposited on the surface of agar, diffusion of the virus evidently takes place without visible change of the agar, the part below the surface becoming infectious, but without any change in the color of the medium or its refraction of light. It is open to question whether this diffusibility of the virus can be regarded as evidence of its being fluid. A minute organism might be able to penetrate into the depths of the agar. When the virus is inserted in the ground in the vicinity of tobacco plants the disease soon makes its appearance in them.

Evidently there is room for further investigation into the nature of this virus.

10. *South African "Horse Sickness."*—Macfadyean[23] found that mixtures of virulent material from horses suffering from "horse sickness" (a disease killing the majority of the horses recently imported into certain districts of South Africa), filtered through Berkefeld and even Chamberland B filters, proved fully virulent and infectious. According to Roux, Macfadyean is the only one to report successful filtration of "invisible" virus through the Chamberland bougie B. Nocard[24] found that the dilutions of the blood remain virulent after passing through Berkefeld filters, but not after going through the Chamberland F. Macfadyean draws the conclusion that the microbe of "horse sickness" is smaller than those of peripneumonia and of foot and mouth disease, which do not pass through Chamberland B.

11. *Epithelioma Contagiosum.*—Marx and Stickler[25] investigated the etiology of the so-called "epithelioma contagiosum" of chickens and other fowls. They show that the disease is readily inoculable, and that the virus passes through Berkefeld filters, but not through porcelain filters (Chamberland F). The virus proved to be resistant to drying and exposure to full daylight for several weeks and to a temperature of —12 C. for five weeks. It also withstood heating to 60 C. for three hours, and to 100 C. for one hour if dried and enclosed in vacuum tubes. It may be preserved in glycerin, but 2 per cent. carbolic acid destroys its power. Immunity is produced by a single, well-marked attack. The virus of the diseases in pigeons (Taubenpocken) is translatable to chickens, but it can not be successfully transferred from chickens to pigeons. In connection with this subject reference may be made to the interesting and important work of Leo Loeb and of Herzog on transplantable malignant tumors of sarcomatous nature in white rats. In a recent article[26] Loeb describes a number of experiments on material from these tumors, and in connection with the matter now under discussion it is especially interesting to note that all of his experiments, like those of Herzog, with filtrates of suspensions from tumors passed through Berkefeld filters, gave negative results. In no case did injections of such material cause the development of tumors.

Summary of Filtration Experiments.—From the results of filtration experiments certain infectious diseases of unknown etiology may be separated into two broad groups: (*a*) those caused by filterable virus, namely, foot and mouth disease, peripneumonia, rinderpest, sheep-pox, chicken typhus, horse sickness, epithelioma contagiosum of fowls, and yellow fever; and (*b*) those caused by non-filterable virus, namely, hydrophobia (?), vaccinia and smallpox.

Of the filterable viruses only that of peripneumonia has been cultivated; the presence of the others has been evident only by the pathogenic action of the fluids used.

This enumeration shows that the application of filtration to the study of transmissible diseases combined with experiments on susceptible animals or human beings, has given the investigator most valuable information that in some cases, no doubt, has spared him many fruitless tasks. The demonstration that the causes of yellow fever, of foot and mouth disease, etc., exist in virulent form in bacteriologically sterile filtrates, so far as demonstrable at the present time, would seem to show that it does not concern elements that can be studied with much hope of success by ordinary microscopic and bacteriologic methods. Thus the claims that yellow fever, for instance, is caused by *B. icteroides* are bereft of all support.

INTERPRETATION OF FILTRATION EXPERIMENTS.

We are hardly in position to affirm that size is the only factor that determines filterability or non-filterability of a virus. Attention has been called to the variable behavior of the virus of bovine pest in the filtration experiments of Nicolle and Adile-Bey. Here the kind of filter, the thickness of the wall, and the character of the fluid were found to play an important part. It was pointed out, too, that an intraleucocytic position of the virus would explain the failure to pass through some filters. Then, again, of late have been described visible bacteria that pass through filters such as the Berkefeld and Chamberland, filters originally regarded as impervious to visible bacteria. Whether this permeability depends on special peculiarities of the organisms in question, such as mobility, elasticity and compressibility, or on special peculiarities of the filters used, has not been determined. In connection with certain experiments in filtering fluids rich in saprophytic organisms, von Esmarch encountered a minute spirillum (*Spirillum parvum*) that readily passes through Berkefeld, Pukall and Reichel filters, as well as Chamberland cylinders (F. controllée). This avirulent organism measures 1 to 3 mikrons in length, and from 0.1 to 0.3 mikron in breadth, closely approaching *B. influenzæ* in size. It is actively motile. I have already referred to the fact that Borrel also met with water vibrios that readily passed certain filters.

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[20] Ibid., 61-63.

[21] Centralbl. f. Bakt., 1899, Abt. ii, v, 27-33.

[22] Ibid., p. 250.

[23] Jour. Comp. Path. and Therap., 1900, xiii.

[24] Quoted by Roux, Bulletin de l'Inst. Pasteur, 1903, i, 7-12 and 49-56.

[25] Deut. Med. Wochenschr., 1902, xxviii, 892-895.

[26] Virchow's Archiv, 1903, clxxii, 345-368.

William B. Wherry[27] corroborates the findings of Theobald Smith in 1899 that a small, active bacillus causing pneumonia in guinea-pigs passes through Berkefeld filter No. 5. This bacillus is 0.5 mikron wide and about 0.7 mikron long. It did not pass through the larger Berkefeld No. 8, nor Chamberland bougie F. Both this organism and *B. coli communis* grow through filters quite rapidly. Hence a virus passing through Berkefeld filter No. 5 is not necessarily ultramicroscopic.[*]

The influence of consistence and adaptability on the part of cells subjected to filtration is shown well in the following observation by Bunge (Physiological Chemistry): "The large blood corpuscles of amphibia may be collected in the filter (that is ordinary filter paper), but not those of mammals. This is not due to their minuteness, for they are far larger under the microscope than, for instance, the crystals of a precipitate of sulphate of barium or oxalate of lime, which do not go through the filter. The red corpuscles pass through the filter because, owing to their soft and yielding consistency, they adapt themselves to the form of filter pores." It would be quite reasonable to infer that invisible organisms passing filters are endowed with motility.

Lode and Gruber advanced the idea that bacteria and similar bodies are held back by porcelain and infusorial filters by virtue of force of attraction, rather than on account of the smallness of the pores, whose diameter they claim generally exceeds the size of ordinary bacteria. They further suggest that the invisible bodies that pass through in the case of the various filterable viruses exist as semi-fluid masses, rather than as corpuscular elements like bacteria, and they even go on to intimate that such viruses may be in solution—Beijerinck's "contagium virum fluidum"—acting after the manner of enzymes, yet capable of reproduction, but only to abandon the idea again because of the absence of demonstrable analogies. It seems to me that the fact that practically all known filterable viruses pass through the Berkefeld filters, whereas many are held back by candles of the Chamberland system, speaks against their theory of surface attraction because Berkefeld filters, being composed of infusorial earth, contain especially extensive surfaces. And then, why should the force of attraction be suspended in the case of the different materials employed in the filtration of these unknown viruses? After all, the size of the pores, being now smaller and again larger than known bacteria, and not at all of uniform diameter, and the physical character of the elements subjected to filtration would seem, for the present at least, to offer more generally applicable explanations of the results of filtration experiments.

And as it is not justifiable to assume that cellular life necessarily ceases at the limits of visibility, it does not seem to me that these experiments with filterable viruses must needs lead to the establishment of new and strange theories of the nature of the contagious elements. There is a relatively far jump between the size of the smallest visible objects and the estimated size of molecules, which again vary greatly in respect to size, and within the ultramicroscopic limits thus defined there may exist a true "mundus invisibilis," some of the inhabitants of which, endowed with metabolic and reproductive faculties, certainly may be the causes of transmissible diseases.

On the other hand, the non-filterability of certain unknown viruses—hydrophobia, variola, vaccinia—may be in itself alone insufficient reason for regarding the particular organisms in question as large enough to be visible. Attention has been given to the possibility that in the case of rinderpest the unseen virus at times may be non-filterable because surrounded by cellular protoplasm. In the case of variola and vaccinia Park's experiments with crushed material indicate, however, that other reasons must be sought for their non-filterability than intracellular position. The facts that Pukall filters hold back or destroy certain complements in serum (Ehrlich and Morgenroth and others), and that many serums with difficulty are filterable when undiluted, indicate that in filtration factors are at work that we now understand but poorly. The filtration of colloidal solutions merits further study, and the entire technic of mineral filtration should be exhaustively investigated.

ULTRAMICROSCOPIC SAPROPHYTIC ORGANISMS.

The probable existence of ultramicroscopic infectious agents has turned the attention to the question whether ultramicroscopic saprophytic forms might not exist also. As pointed out by Lode and Gruber and by von Esmarch,[28] it is rather remarkable that such forms have not been encountered as yet in view of the large amount of work done with various forms of bacterium-proof filters. Von Esmarch's experiments in this line consisted in the filtration of various mixtures, rich in bacteria of all kinds, like ditch water, vegetable infusions, decomposing urine, sputum, parts of cadavers, fecal matter, etc. The clear filtrates thus obtained were used for culture experiments on a large assortment of nutritive solutions kept under aërobic, as well as anaërobic conditions. But his efforts in this way to demonstrate the presence of ultramicroscopic forms all failed. All his mixtures, even after months of observation, remained either clear, or if turbidity or sediments formed, subcultures yielded no indication that this was due to living organisms capable of proliferation. This apparent failure he would attribute to our ignorance of the conditions essential for the life and multiplication of ultramicroscopic or invisible organisms, the actual existence of which he would not deny on the strength of these experiments. In this connection it is interesting to note that virulent filtrates of infectious materials derived from diseases just considered (except peripneumonia) have not shown any macroscopic or microscopic sign of the presence of living organisms so far as that is determinable by present methods. In our laboratory at Rush Medical College Dr. Friedman repeated some of the experiments made by Esmarch, obtaining only negative results. Whether virulent filtrates contain particles of ultramicroscopic size whose presence may be rendered evident by means of physical methods, such as that described by Siedentopf and Zsigmondy,[29] has not been determined as yet. By this method an intense oblique illumination falls on a small field under certain conditions so that ultramicroscopic particles refract light enough into the objective to produce images, or rather luminous points. The authors succeeded in this way to render visible minute particles of gold incorporated in glass that with the highest magnification of a Zeiss microscope appeared perfectly homogeneous when illuminated in the ordinary way. Mouton[30] has suggested the use of the apparatus in bacteriology. (The use of the method in studying pathogenic agents too small to be seen is spoken of also in an editorial in THE JOURNAL, July 11, 1903, p. 104.)

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[27] Jour. Med Research, 1902, viii, 322-328.

[*] It follows that filtration experiments must be controlled most carefully. Löffler and Frosch used as control *B. florescens*; Nicolle the vibrio of chicken cholera, and Borrel certain water vibrios. Further, that in view of the fact that bacteria may "grow through" filters, all filtration of unknown virus must be rapid.

[28] Centralbl. f. Bakt., 1902, xxxii, 561-569.

CONCLUSIONS.

1. Clinical and experimental observations furnish strong evidence, and in some cases absolute proof, that certain transmissible human and animal diseases of unknown etiology are not toxic, but infectious, that is, caused by living organisms, capable of proliferation and metabolic activities.

2. In the case of the human diseases of this group, knowledge is farthest advanced in regard to those that are communicable to animals—hydrophobia, vaccinia and smallpox—and experiments on human beings have shown that the cause of yellow fever occurs in the blood, passes through Berkefeld filters, the filtrate being bacteriologically sterile, according to present methods, and that infection occurs through the medium of mosquitoes (*Stegomyia fasciata*). The etiology of the other strictly human diseases—syphilis, measles, scarlet fever, chicken-pox, typhus fever—remains unknown.

3. Certain morphologic elements in the lesions of vaccinia and smallpox are regarded by some investigators of the highest standing as representing stages in the developmental cycles of protozoa. The causative agents of these diseases do not pass through bacteria-proof filters.

4. The virus of many transmissible animal diseases (foot and mouth disease, peripneumonia, rinderpest, sheep-pox, chicken typhus, horse sickness, epithelioma contagiosum of fowls) passes through various filters ordinarily regarded as impermeable to the smallest known bacteria, the filtrates being virulent, though giving no sign of containing visible corpuscular elements.

5. Whether these invisible, and except in peripneumonia, uncultivable viruses are all ultramicroscopic in size, or invisible also for other reasons has not been settled definitely, but there is much in favor of the view that they are ultramicroscopic in size.

6. Further progress in this field may be expected from the application of methods recently introduced by physicists in order to furnish ocular demonstration of the existence of particles too small to be seen directly.

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[29] Annalen der Physik, 1903, x, 1.

[30] Bull. de l'Inst. Pasteur. 1903. i. 27.

Elevation of the Larynx for Relief of Neuralgia.—Naegeli announces that he has frequently caused almost immediate cessation of cephalalgia and facial neuralgia, as well as forms of long-continued odontalgia, by simply elevating the larynx, holding it well upward for sixty or seventy seconds. This frequently requires to be repeated several times, but quite as frequently one single attempt will prove successful.—*Med. Times.*

TRIGEMINAL NEURALGIA TREATED BY INTRANEURAL INJECTIONS OF OSMIC ACID.

JOHN B. MURPHY, A.M., M.D.
CHICAGO.

June 8, 1903, Mr. A. L. C., age 76 years, retired farmer, presented himself to me for treatment of a long-standing facial neuralgia. He gave the following history:

For thirteen years has suffered from neuralgic pains in right side of face, but they were not very severe or constant until four years ago. At that time he had a severe attack, which he thought was caused by a diseased upper cuspid tooth on right side. The tooth was removed about two months after the onset, and for the six weeks following he was relieved. Pain then recurred and was severe and persistent. Two years ago he had an operation performed on the right superior maxilla, the exact nature of which he does not know. He was free from pain for four months after the operation, but at the end of that time it returned, and has been present, at intervals, ever since. The pain is of severe shooting character, beginning at right ala nasi and radiating toward cheek. He also has some pain in the forehead, just above the right eyebrow, the pain radiating toward temple. General health has been fair for a man of his years.

Previous History.—"Ague," "bilious fever," etc., years ago. Used to smoke and drink moderately. Family history is negative.

Examination shows an old man of rather poor nourishment; lungs negative; heart negative; arteries sclerotic. Urinary examination negative. Slight tenderness over supraorbital and infraorbital divisions of fifth nerve at their foramina of exit. No areas of hyperesthesia or anesthesia and no evidences of tumor or inflammatory processes along the course of either nerve.

In considering the proper treatment to employ in this case, I was at first somewhat undecided. The superficial divisions, excisions or evulsions of the affected nerves at their foramina of exit would give the patient only very temporary relief, lasting, in all probability, only a few weeks or months. The excision of the nerve trunks external to the cranial foramina would have been a formidable operation, considering the poor physical condition of the patient, and would, I think, have given little better ultimate results. The recurrence would have been longer delayed, but just as certain as after the superficial operations. The intracranial division of the superior and inferior maxillary divisions with gutta-percha intervention to prevent re-establishment of nerve trunks (Abbe) was not applicable here, as it was the ophthalmic division that was most affected. The same objection would hold good with reference to Mayo's method of periosteal denudation of the bony margins of the foramina to secure bony occlusion of canal. Excision of the gasserian ganglion or resection of the sensory root within the cranium, was clearly contraindicated on account of the patient's age, the sclerotic condition of the arteries and his poor state of nutrition. An operation which is attended by a mortality of from 10 to 20 per cent. in robust patients is not to be thought of in a man 76 years of age, whose resistance is at a minimum.

Something, however, had to be done, so I decided to try the intraneural injection of osmic acid solution, as recommended by Mr. W. H. Bennett in the London *Lancet*, Nov. 4, 1899. In his paper, Bennett reports ten cases treated by this method, with most gratifying results in all. Eight of these cases were typical spasmodic tic, in one of which Meckel's ganglion had been previously removed and the inferior division resected at the base. In spite of these operations, the pain recurred in the buccinator muscle and was intolerable. Of the other two cases, one was a painful amputation-stump and the other a neuroma of the median nerve just above the wrist, following a division of the nerve by a piece of glass eight years previous. Without going into the reports of these cases minutely, suffice it to say that the results were all that could be desired and permanent up to the time the article was written.

The technic of the operation, as given by Bennett, and which I followed, is: The nerve is exposed through a small incision about a half-inch in length, directly over its foramen of exit, the line of incision being horizontal and parallel with the eyebrow, in the case of the supraorbital branch, and with the normal creases of the face in the infraorbital and mental branches. The nerve is elevated by means of a blunt hook, and from five to ten minims of a fresh 1.5 per cent. solution of osmic acid injected directly into its substance. An ordinary hypodermic syringe and fine needle are used, and the solution injected in several different places, to be sure that every fiber is reached. After this is accomplished, a small amount of the solution is injected between the nerve and its sheath in the bony canal. During the procedure, a small pledget of cotton is held around the needle to absorb the excess of solution which regurgitates and to protect the skin. Wherever the solution comes in contact with the blood or soft tissues in the wound, an immediate blackening results, due to the formation of the hydroxid of osmium. The local action of the osmic acid on the terminal nerve filaments exposed in the wound is probably beneficial, so a small amount of it should be allowed to come in contact with them. After the injection is completed, the incision is closed with horse-hair or catgut suture; primary union follows, and healing is not interfered with by the action of the acid on the tissues.

My case was operated on June 11, 1903, under ether anesthesia. Local anesthesia should be used for this operation in the majority of cases. Bennett's technic was followed to the letter, and all three nerves, supraorbital, infraorbital and mental, injected. The operation lasted only about twenty-five minutes, and the patient came out of the anesthetic in excellent condition; pulse 66, temperature 99.6 F. He was put immediately in a semi-sitting position, as practically all of our patients are after operation, and the administration of fluids commenced as soon as he was awake.

In the afternoon his temperature was 99.8 F., and pulse 64. His pain had entirely disappeared. June 12, p. m., temperature 100, pulse 70; June 13, p. m., temperature 99.8, pulse 62; June 14, temperature and pulse normal; sat up in chair. After this temperature remained normal, he was up and around every day, and the sutures were removed June 17. Wounds healed by primary union. Patient discharged from hospital, with pain entirely gone, June 20. In a late report received from this patient July 21, he states that there has been no recurrence of the pain and that he feels perfectly well.

The modus operandi of this procedure is at the present time not definitely understood. The acid probably acts in one of two ways, or possibly in both: first, by producing a degeneration of the nerve on the proximal side of the injection, toward the ganglion; or, second, by causing a local destruction of the nerve and its terminal filaments. The former seems to me the more likely explanation of the two, first, because the pain does not usually subside completely immediately after the operation, as it does when the peripheral nerves are divided or resected, and as it would if the osmic acid produced only a local destructive effect. Instead, it subsides slowly and gradually, the patient, as a rule, not being entirely free from it for a week or ten days following operation. Second, the relief from pain is permanent, which is not the case after peripheral resection. In one of Bennett's cases there was a recurrence of the neuralgia, but not in the areas supplied by the nerves which he had previously injected. It was located in an entirely different area and yielded promptly to another injection of osmic acid.

Bennett, in his paper, does not describe the changes which take place in the nerves after injection, nor does he give his views as to the modus operandi of the treatment. I am now conducting a number of experiments on dogs, which, when completed, I hope, will throw some light on the subject.

The physician's post-graduate education comes from patients, from books and journals and from societies, which should be supplemented every five or six years by a return to a post-graduate school to get rid of an almost inevitable slovenliness in methods of work.—Osler.

The Obstetrician's Fee.—So long as the practitioner is so poorly paid for the valuable services he renders a woman at the time of her confinement, the woman will be neglected, and much that could be prevented will constantly happen. The average fee for obstetrical service in small towns and villages is $10, this service including attendance at the confinement and one visit during the puerperium. An extra charge is sometimes made for the application of forceps when urgently needed. The patient is not seen during her pregnancy, and in majority of cases not reporting for treatment or counsel until the call is made to the labor. The laborer is truly worthy of his hire, and if ever responsible service was rendered, it is during pregnancy, confinement and puerperium. The average workingman, on wages of $6 a week, can easily afford to lay aside $3 a month during his wife's pregnancy for the payment of the physician. When service is rendered, $25 is a very small fee for the work that *should* be done for a woman during her pregnancy, confinement and puerperium. The responsibility incurred, the care of two lives, etc., are as great as those of the surgeon in a celiotomy, and the fees should be commensurate. The profession is at fault, and with some unanimity of action the fees for obstetrical service could and should be raised.—*Louisville Monthly Journal of Medicine and Surgery.*

Eye Symptoms in Tabes.—During four and one-half years in Uhthoff's ophthalmologic clinic at Breslau, Mann found 165 cases of certain tabes and 200 with one or more suspicious symptoms. In the 165 certain cases the pupil reflex was normal in only one instance. Its absence, therefore, is a more frequent symptom in tabes than even the absence of the knee jerk. About 78.8 per cent. were in the early stages of the affection. Tabes was evident in 67.6 per cent. of the 136 cases during the same period in which the pupil reflex was absent, and general paralysis in an additional 8.8 per cent., while syphilis, with or without cerebral symptoms, was unmistakable in 8.1 per cent. The value of the ocular symptoms in tabes is that they may be evident long before any other manifestations appear. Syphilitic antecedents enhance the probability, but even without these the probabilities are three-fourths in favor of tabes. The pupils were unequal in one patient, an old syphilitic, who complained of slight disturbances in micturition, the legs a trifle anesthetic, the light reflex normal. A year later not a trace of any of these symptoms could be detected, and the man was apparently well, but when examined again, four years afterward, unmistakable signs of tabes had developed, showing that the unequal pupils five years before had been the initial symptom of the affection. Atrophy of the optic nerve was noted in 33.3 per cent. of the 165 patients, and in 27.2 per cent. of these there was ataxia. Mann's article is published in the *Allg. Med. Ct.-Ztg.*, lxxi, p. 635.

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KUSSMAUL'S AUTOBIOGRAPHY.

In 1899 appeared *"Jugenderinnerungen eines Alten arztes,"* in which the distinguished clinician, Professor Kussmaul, delighted his students and friends the world over with pictures of his early days in Heidelberg and of his *Wanderjahre* in other university towns. As an autobiography the work in many respects was unique. The style was charming and the sketches of his old teachers and of the stirring days of '48 proved so entertaining to the profession and the public that five editions were called for within four years. The volume ended with the story of his life as a country doctor in the Black Forest; then a desperate illness (acute paraplegia), gradual recovery, return to Heidelberg—and what seemed to the young doctor with a wife and two children a hopeles tragedy proved to be only the starting point in a career of singular brightness. One thing gave to the work an unusual attractiveness, it ended where biographies, particularly autobiographies, often begin—we saw only the struggles, trials and difficulties of the early years, there was no word of the distinguished teacher or much-sought-after consultant. Every reader felt that he would like another installment of such charming reminiscences.

Kussmaul died May 28, 1902, in his 80th year, suddenly, as he had hoped. Professor Czerny, the distinguished surgeon, has edited *"Aus meiner Docentenzeit"* in Heidelberg, in which he gives an account of his life as a young teacher. Before beginning work he went to Wurzburg to study pathology with Virchow and to take anatomic and chemic courses. A couple of months were spent at the asylum of Illenau, where he became interested in epilepsy, a subject on which he made his well-known researches in 1857, and on which, as we learn from the preface, he was preparing a monograph at the time of his death. An assistant physician was Gudden, who afterward become so well known; of his tragic death while in charge of the King of Bavaria, Kussmaul gives an interesting account. There seems to have been some difficulty in getting permission to teach at Heidelberg, and a most amusing description is given of his habilitation thesis, which pleased neither the faculty nor the authorities. He began to lecture on therapeutics in the winter of 1856-1857, and later on toxicology, psychiatry and legal medicine. Young teachers may read with profit what he says about the difficulties experienced in becoming facile of speech, and of the difference between *Zungenfertigheit,* which is congenital, and *Redefertigheit,* which is acquired. It took much trouble, time and practice before he became a fluent speaker, adopting finally the plan of a skeleton of headings from which the lecture was carefully elaborated beforehand. He quotes from an old friend two golden rules—to give your audience at appropriate places a brief rest, and to hold the hearers with your eyes.

Some of his early work is described, the studies in rigor mortis and his important contribution to the structural anomalies of the uterus. Perhaps the most interesting chapters are those describing the old and young naturalists and physicians of the university, and the social life in Heidelberg; of Kirchhoff, Bunsen and Helmholtz, a group of inspiring teachers hard to match in the early fifties, and of others less celebrated there are delightful reminiscences and anecdotes. One of the little touches from the hand of a master is the story of Johanna Kapp, the disturber of hearts of his student days. The concluding chapter gives an interesting account of the organization of the Association of German Naturalists and Physicians, and of the meetings at Bonn and Karlsruhe.

We regret that we do not see in Professor Czerny's introduction any notice of a continuation of this autobiography. In Erlangen, in Frieberg and in Strassburg Kussmaul took an important part in the development of scientific medicine and he reached a position of the very first rank among the physicians of Europe. But he was more than this—the qualities of heart and head were equal; he was a good as well as a great man.

THE CARNEGIE INSTITUTION AND MEDICAL RESEARCH.

Since the establishment of the above institution by Mr. Carnegie, speculation has been rife among medical men as to what provision, if any, would be made for investigation in the field of medicine. In a recent address, the president of the Carnegie Institution, Mr. Daniel C. Gilman, made very clear the policy to be pursued by the board of directors in this matter. After paying a tribute to the scientific workers who have so notably enriched medical knowledge in the recent past and expressing the conviction that medicine is at the present moment on the threshold of discoveries of the highest importance, Mr. Gilman stated that it was the purpose of the Carnegie Institution to confine its medical work to the study of the normal, and to leave the inquiry into the abnormal to the Rockefeller Institute for Medical Research.

As an example of the kind of problems the Carnegie Institution will attempt to solve, the speaker referred to the subject of nutrition, emphasized the desirability of an extension of our knowledge in that field, hinted that it was one in which very profitable work could now be undertaken and gave the impression that investigators of merit attempting to deal with problems bearing on it would receive liberal support from the board. A beginning has already been made. The services of Dr. Gamgee have been secured. This well-known physiologic chemist, having agreed to spend some time in preparing for the board a report in which he will offer an opinion as to the present status of the problems connected with nutrition, and point out the paths along which, in his judgment, research should proceed to yield the most important results in the immediate future.

Nothing was said by Mr. Gilman in the address referred to regarding problems in human anatomy, but there can be little doubt if research in physiology is to be subsidized, that the study of anatomic problems will also be supported. Besides, the liberality of the Carnegie Institution, with regard to the Marine Biologic Laboratory at Wood's Hole, is sufficient proof of the interest of the board in the problems of general morphology. We can be sure, therefore, that the great significance of the unsolved questions in human morphology will not be overlooked. Anatomists tell us that nowhere perhaps could money be better expended than in illuminating some of the obscure regions in human histology, embryology and neurology.

The relegation of the whole domain of pathology to the Rockefeller Institute throws a great responsibility on the latter institution. It is a responsibility, however, which the founder of the institute and its board of directors seems willing, as far as in them lies, to assume. Hitherto the medical profession has had to depend in large part on its own unaided and unendowed efforts when it wished to advance medical knowledge. It is a matter for congratulation that the industry and self-sacrifice of the profession are to be supplemented from now on by the activities of two great research foundations, one directing its attention to the phenomena of the normal human body, the other to the phenomena presented by the human body in disease.

EDISON AND X-RAY INJURIES.

At this somewhat late day, Mr. Edison and, through him, the newspapers have all of a sudden discovered that *x*-rays can cause injuries, and, like many other belated discoveries, the topic is now one of lively interest in the daily press. According to the various newspaper reports, Mr. Edison's injuries are interesting. His left eye is out of focus, his digestion is upset and lumps have formed all through the region of his stomach. He knows it is the result of the *x*-rays, because he held the tube close to his stomach when he was working with *x*-rays five or six years ago. The disease from which he is suffering is of a most mysterious character, and no doctor is able to tell him anything about it: and he ought to have been able to find out, for among the many specialists he has consulted there is one man who has dissected more than four thousand bodies, and if a man who has made four thousand dissections can not tell you what is the cause of lumps in your stomach, who can?

The injuries to Mr. Edison's assistants are of a much more tangible character. Without any doubt they have had *x*-ray burns, but there is nothing to indicate that the burns are not of the ordinary character of other *x*-ray burns. It is probable that his assistant, whose arm had to be amputated, is one of the cases which have been recently mentioned in the literature of epithelioma developing in an *x*-ray dermatitis of long standing. From the character of chronic *x*-ray burns the possibility of epitheliomata developing in such injuries has been pointed out by Pusey, and cases of this sort have been reported by Allen and White, and others.

If we are to believe the newspapers, Mr. Edison does not stop at recounting his strange experience, but readily offers an explanation for it, namely, that the condition is due to the action of the rays on the phagocytes; that the rays paralyze the active phagocytes without actually destroying them—all of which is somewhat bewildering. In view of the careful studies of *x*-ray injuries that have been made by Scholtz, Grouven, Gassmann, Pusey and others, which show very definitely the changes that occur in tissues under the influence of *x*-rays, it would seem that his histologic discoveries are not of serious interest. He has, as far as can be judged by the newspaper reports, found nothing that has not been found before, and offered no explanation that is of any value. He is rehashing in the daily press facts that had been learned by physicians through sad experience seven years ago. The whole thing seems to be a good deal like the promised storage batteries, a useful vehicle for publicity when propelled by the power of a widely known name.

PRACTICAL VALUE OF BACTERIOLOGIC EXAMINATION OF THE BLOOD.

That the bacteriologic examination of the blood in cases of infectious disease has been of scientific value and has modified our conception of many of these diseases is well known. That this method of examination is also of practical clinical value is clearly set forth in an article by Hektoen,[1] in which the results of his own work and those of others are considered from the point of view of their practical application in medicine.

The technic is simply that of obtaining with scrupulous asepsis a few cubic centimeters of blood and immediately inoculating media, e. g., bouillon, with the same, placing in the incubator and identifying by ordinary bacteriologic methods the organisms that may appear. A glass syringe is used, and a vein at the elbow commonly selected. The operation is almost painless. Ordinary bacteriologic training is a prerequisite to the successful application of this method and fairly complete laboratory facilities are essential, but no unusual skill is required.

The results already obtained are seen in the septicemias. Etiologic diagnosis is now possible. This is an absolute essential before specific serum therapy can be

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1. Hektoen: The Practical and Scientific Value of Bacteriologic Examination of the Blood During Life. Illinois Medical Journal, July, 1903.

applied. And only by a careful study of many cases with bacteriologic examination of the blood to control the diagnosis can clear clinical pictures of blood infections be obtained. Already something has been accomplished in this line, largely through the bacteriologic study of the blood, as may be seen from reading the recent monograph by Lenhartz.[2] Our views as to prognosis in the septicemias must be somewhat modified. As shown by others and as Hektoen has found in his own work in scarlet fever, the presence of streptococci in the blood does not necessarily mean death.

The results in pneumonia are of value as the pneumococcus may be found in probably all cases. The work of Rosenow with the pneumococcus has been recently noticed in these columns. But of much greater value from the diagnostic point of view is the ability by bacteriologic examination of the blood to recognize typhoid fever before the spots, splenic enlargement, peculiar temperature, curve or agglutination reaction are present. No early physical signs, as in pneumonia, enable typhoid to be recognized before several days of fever have elapsed. By this means, however, it is recognized, and with certainty, often as early as the third day of the fever. And the only positive means of differentiating between the paratyphoid and true typhoid is offered in blood examination.

Physicians too often get the impression that research is wholly and purely of theoretical value. While there can be no higher class of investigation than that carried on for the sole purpose of discovering scientific truth, it is well for us to have the fact called to our attention as in this paper, that from all the enormous mass of laboratory research there is sure to result sooner or later knowledge that can be placed before the physician with the assurance that it is a help in his efforts to recognize and cure disease.

OZONE AND WATER PURIFICATION.

It has long been known that ozone is a highly effective germicide, but the great cost of production and other difficulties have proved for many years a barrier to its use on any large scale. Within the last four years new and interesting experiments on the purification of water by impregnation with air containing a high per cent. of ozone have been conducted in various parts of Germany. These have been carried out with a form of apparatus designed by the famous manufacturing firm of Siemens and Halske. The experiments have been followed bacteriologically by Ohlmüller and Prall,[1] by Schüder and Proskauer,[2] and others. The results have shown that the germs of Asiatic cholera, of typhoid fever and of dysentery can be surely destroyed in the ozone generating appliances under ordinary practical conditions of operation. Small ozone plants have been installed in connection with the water-works at Paderborn and at Schierstein, near Wiesbaden, and are said by Proskauer and Schüder to yield a water very low in bacteria, the number in the raw water being sometimes reduced from 20,000-30,000 to only 8-10. The ozone is generated by electricity, and the amount introduced into the water is so adjusted on the basis of carefully controlled experiments as to afford a maximum of operative efficiency at a minimum of ozone content. The results as stated certainly seem to indicate that for dealing with certain waters and with small town supplies the method is worthy of further investigation.

The item of expense, however, even at its present relatively low figure, is still far from reassuring. According to the published statements,[3] the cost of water purification by the ozone process has not been reduced below about $18 per million gallons, whereas the total cost of sand filtration, a tried and efficient method of water purification, is estimated, including interest and depreciation, at from $7 to $9 per million gallons. It is evident that some experimentation under American conditions will be needed before the treatment of water supplies by ozone can be indiscriminately advocated as applicable to the larger public supplies of this country.

MEDICAL CONTINGENT FEES.

In a damage case recently tried in a Colorado court it was brought out in the testimony that the attending physicians testifying for the plaintiff had a contract to accept as their fee a certain percentage of the award in case the suit was successful. The attorneys for the defendant corporation, naturally, made the most of this admission, holding that it was an agreement contrary to good policy and morals, while the physicians, on the other hand, claimed that the transaction was an innocent one; that, as the injured person was poor, she was allowed to contract to pay her bill in this way. There is something to be said on this side, and it does not necessarily follow that the chance of a contingent fee should influence the testimony as to the fact of the physicians. Indeed, we believe it would not, but the whole business has a dubious appearance, and the average layman is apt to put on it the very worst construction. The physician who makes such a contract is put before the public as a promoter of litigation, a sort of medical champertor, by the opposing parties if it comes before the jury, and must suffer all the prejudice that can be thus aroused. While contingent fees are undoubtedly common enough with the legal profession, they certainly are not in the medical, and it would be more in accord with the spirit of the principles of medical ethics to take the chances of losing a fee rather than those of subjecting oneself to the possible interpretations of the other course. There are occasions when one may be too business-like, and this is one of them.

MEDICAL JURIES.

It has been suggested that in criminal cases in which questions of mental sanity or other medical questions are involved there should be a jury of physicians. Thus can be avoided, it is to be inferred, the scandal of conflicting "expert" testimony (so-called), which is so often used, it is claimed, to befog the jury and embarrass justice. It is assumed that a medical jury would be able to properly interpret the evidence and reach a correct conclusion where an ordinary jury of laymen would fail. This seems plausible, but will hardly bear examination. The plan would fail for the same reason that our present much-criticised usage of expert testimony fails; because it is based on the presumption that every physician is necessarily an expert in every branch of his profession. It is discrediting no one to affirm that an eminent surgeon may be almost as incompetent as a layman in questions of psychiatry, and vice versa, though there may be many individual exceptions to the rule. Medicine is a broad subject, and one who contracts to cover the whole field as an expert will find that he has undertaken to master a pretty considerable fragment of omniscience. Yet there are many who thoughtlessly, we believe, will offer opinions or testimony on subjects that they can not have adequately considered or studied and in which they have had no special experience. This, far more than any intentional dishonesty, has brought expert testimony into disrepute. The assumption that an average panel of medical jurymen would insure a correct verdict in cases where medical points are involved is by no means justified. They would be better able than intelligent laymen to estimate the value of certain kinds of evidence, but there would still be infinite chances for error. The proposed plan would certainly fail to right all the wrongs of the present methods, the real remedy for which is in a more discriminating estimation of what is to be accepted as expert testimony. The advantages of the plan could never counterweigh the reasons of public policy that have practically exempted physicians from jury duty; and we should protest against the imposition of such on a profession that in numberless other ways does more than any other for the public weal. This is saying nothing of the improbability of counsel ever accepting those who are so prominently wanting in the prime requisite of unintelligence.

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[2] Lenhartz: Die Septischen Erkrankungen, Nothnagel's System, Bd III, Theil 1, 1903.

[1] Arbeiten aus dem kaiserl. Gesundheitsamte, 1902, vol. xviii, p. 417.

[2] Zeitschr f. Hyg., 1902, vol. xli, p. 227, and 1903, vol. xliii, p. 293.

[3] Ibid., vol. xliii, p. 307.

THE REPORTED "CURE FOR LOCKJAW."

During the past week the papers have circulated reports concerning the discovery of another "wonderful cure," this time in the way of a cure for tetanus. The facts in regard to the matter, as we understand them, are as follows: Several months ago Dr. S. A. Matthews described before the Medical Club of the University of Chicago his experiments with "cell cathartics," as he terms them. His solution is a mixture of sodium chlorid, sodium sulphate, sodium citrate and calcium chlorid, which, when injected into the veins directly, seems to have much the same effect that similar solutions have in the body, causing fluids to leave the cells or interstices in the body, at least there is a great increase in the amount of fluid excreted by the kidneys of experimental animals, which is much in excess of the amount of fluid injected. According to Matthews' experiments, such intravenous infusion will rapidly wash out any toxic substance that may have been introduced, such as morphin, and also bacterial toxins. He performed a series of experiments on rabbits, which seemed to indicate that this solution in these animals was able to remove the toxin even after it had combined with the nervous system and produced symptoms, and to save the lives of many of the animals when the controls died. These results, with certain conclusions, were reported at the meeting that we have mentioned, but, so far as we have been able to learn, have not been published. Attention is called to the fact that Dr. S. A. Matthews is not to be confused with Prof. A. P. Matthews, who is assistant professor of physiologic chemistry at the University of Chicago, the newspaper accounts having given the title of the latter to the former. The name of Dr. S. A. Matthews does not appear in the circular of the university of April, 1903, as connected with the institution, although we understand that he is giving a course in pharmacology during the summer session. This case, which has been reported by the newspapers as cured by the saline carthatsis, is said to have had a long period of incubation and to have started out as a case of chronic tetanus, but after a rather protracted course had seemed to be growing worse, when this treatment was begun. The infusions were repeated frequently, and the boy has recovered. In other words, there is a single case of chronic tetanus that has recovered under this particular form of treatment. It seems much like the recent furor concerning the intravenous injection of formaldehyd in septicemia, but with this difference: formalin intravenous injection was opposed by experimental study previous to the public report, and also by clinical experience, the use of any substance that will increase renal elimination in tetanus is indicated in tetanus, and Dr. Matthews seems to have applied the results of laboratory experiments to a human case. An objectionable feature of the case is the prompt appearance of full accounts of the case in the daily press. Who is responsible for this we do not know, but the natural and proper result is to cause a profound and general scepticism among all physicians. However, such publicity does not necessarily brand the work as unscientific, and we trust that Dr. Matthews may continue his work, and wish him success in some more acute cases. Until such cases have been reported through professional avenues we recommend that the matter be held by the profession *sub judice*.

Medical News.

ILLINOIS.

Gift to Hospital.—Abram Brokaw, Bloomington, has made a donation of $30,000 to the Brokaw Hospital in that city.

Illinois Water To Be Analyzed.—The State Board of Health is about to make a systematic investigation of the water supplies of the different cities of the state for the purpose of discovering whether the water is likely to be prejudicial to health. The water will be collected under the direct supervision of the board, and a careful chemical and bacteriologic analysis will be made of each sample under the direction of Professor John H. Long of the Northwestern University, Chicago.

State Charities.—The quarterly report of the State Board of Charities shows a surplus of $192,294.11. The average number in the state charitable institutions was 11,165. The total per capita cost for maintenance was $40.27 gross, or $37.79 net. The following is the net per capita cost for the quarter in all the institutions: Elgin Insane Hospital, $41.79;

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Kankakee Insane Hospital, $36.96; Jacksonville Insane Hospital, $37.65; Anna Insane Hospital, $33.44; Watertown Insane Hospital, $30.91; Asylum for Incurable Insane, $41.13; Asylum for Insane Criminals, $51.17; School for the Deaf, $52.61; School for the Blind, $51.53; Feeble-minded Asylum, $33.98; Soldiers' and Sailors' Home, $29.15; Soldiers' Orphans' Home, $51.04; Soldiers' Widows' Home, $49.91; Eye and Ear Infirmary, $56.97, and Training School for Girls, $42.30.

Chicago.

Will Enlarge Hospital.—Alexian Brothers' Hospital has purchased a plat of land adjacent to the hospital, 485 by 125 feet, for $10,000.

Personal.—Dr. G. Le Roy Brown, has returned from Europe. ——Dr. Ernst Riebel has been appointed an associate member of the County Hospital surgical staff.

General Hospitals Require No Frontage Consent.—Acting Corporation Counsel Fyffe has given an opinion to the effect that general hospitals are not required to secure the frontage consents of residents in the same block in order to build. The officials of Augustana Hospital applied for a building permit for an addition. Hospitals for the insane, inebriates and the treatment of contagious diseases require frontage consents.

Impure Milk.—Out of 760 samples of milk and cream analyzed in the health department laboratory during the week ended August 15, 60 were found below grade. Among these 760 samples from all sources there were 112 taken at the trains—before the milk had come into the possession of the city dealer. Out of these 112 samples four were found below the standard of butter fat and 40 below the standard of total solids.

MARYLAND.

Baltimore.

Personal.—Dr. A. D. McConachie is at Lucerne, Switzerland. ——Dr. Walton Bolgiano is at Asbury Park.——Dr. T. A. Ashby is in Virginia.——Dr. J. B. Crenshaw has returned after nearly a year spent in study at Berlin.——Dr. Samuel Johnston is at Narragansett Pier.

Deaths of the Week.—During the week ended August 15 there were 190 deaths, an annual death-rate of 17.66 per 1,000. This is much below that of the corresponding week of the three previous years. Thirty-five of the deaths were from diarrhea; 6 from typhoid fever, and 3 from dysentery.

Prevalent Diseases.—Scarlet fever and diphtheria are very prevalent, especially in East Baltimore. There were 115 deaths from the former in July and 94 from the latter. The health department will make every effort to prevent their spread on the opening of the public schools in September.

NEW YORK.

Incubator at Coney Island.—The infant incubator which was so successful at the Pan-American Exposition is now stationed at Luna Park, Coney Island. At a recent visit, there were fifteen premature-born children alive and thriving in the hospital.

Influenza.—The State Board of Health has issued a bulletin in which is reviewed the reports on influenza for the first half of the present year. It is stated that more deaths are ascribed to influenza in the first year of life than in the next twenty years, and that only one-fourth of the deaths occurred before the age of 50. The greatest number of deaths occurred between the ages of 70 and 80, and the disease was most prevalent in December, January, February and March. It is to be noted that at all ages, with the exception of the first year of life, more females than males succumb to the disease.

Buffalo.

Personal.—Dr. Grosvenor Trowbridge has returned from a visit to Cayuga Lake.——Dr. Julius Ullman has returned from Atlantic City and New York.——Dr. Roswell Park has taken a trip up the lakes.——Health Commissioner Green is spending his vacation fishing in Northern Canada.

Substitute Internes.—Recently there has been a great deal of agitation in one of the daily papers concerning young internes in the Buffalo hospitals. In one or two instances the medical internes were found to be senior students. It is often customary to have students substitute for internes who are on short vacations. They, however, never have the responsibility of examining or treating cases, but attend to such duties as are required in the laboratory, making urinalyses and blood examinations, etc.

July Statistics.—The monthly report of the Department of Health for July shows an annual death-rate of 16.2 per 1,000. The principal causes of death were as follows: Consumption, 33; cholera infantum, 40; pertussis, 7; typhoid fever, 10; debility, 16; marasmus, 16; cancer, 31; apoplexy, 19; meningitis, 14; tetanus, 1; valvular heart disease, 19; pneumonia, 22; appendicitis, 8; cirrhosis of liver, 4; gastroenteritis, 25; nephritis, 15; diabetes, 8, and violence 43. The total deaths were 513, as compared to 413 for July, 1902.

Milk Waterers Prosecuted.—Twenty-one milk dealers who water milk are being prosecuted by the commissioner of agriculture. The department originates its own cases; agents from time to time unexpectedly examine the milk in peddlers' wagons. If it falls below the test a chemical analysis is made, and if this shows the milk contains more water than is natural suit against the milkman is begun. These suits are tried in the Supreme Court, and the penalty imposed by the law is $50 to $100 for the first offense and from $100 to $200 for the second offense.

New York City.

New Hospital and Dispensary.—A new dispensary and hospital has been established at 347 East 116th street, having accommodations for 20 patients. The following constitute the visiting staff: Drs. Salo Cohn, Reuben Cronson, I. Goldstein, Herman Jarecky, Robert Kunitzer, I. Levin, Louis Lichtschein, J. Mark and Leopold Marcus.

The New Bellevue Hospital.—Negotiations have been going on for some time looking to the purchase of land adjoining the present Bellevue Hospital in order to provide a site for the new hospital building. It is now stated that all obstacles have been removed and that it is expected to begin the erection of the buildings early in the fall. When acquired the total area of grounds is represented by all that tract of land lying between Twenty-sixth and Twenty-ninth streets, First avenue and the East River.

The Infant Hospital of New York was recently visited and found to be most complete in all its requirements. Of especial interest was the steam room for infants suffering from croup or pneumonia. The entire bed is placed in this room, while the nurse watches the patient through a glass partition. It is an excellent suggestion for use in pneumonia and influenza, as well as nephritis of adults. In the laboratory work was being carried out on the bacteriology of summer diarrheas with reference to the Shiga bacillus as the causative factor. There were some summer diarrhea cases in the hospital, but scarcely any of the severer cholera infantum variety on account of the unseasonably cool weather.

Barber-Shop Sanitation.—Although steps have been taken in the past to secure certain sanitary reforms in barber shops, such regulations have been chiefly honored in the breach. The Board of Health now gives warning that after September 1 the new rules will be rigidly enforced. These rules provide that the barber shall wash his hands with soap and hot water before attending any person; that the use of powder puffs shall be abolished; that a towel shall not be used for more than one person without being washed; that sponges shall no longer be used; that mugs, combs, razors, clippers and scissors must be rinsed in boiling water or in some germicide each time after use; that alum or other astringents shall not be used except in the form of powder, and that a copy of the regulations must be conspicuously posted in each shop.

GENERAL.

Committee on Public Health.—Dr. Heman Spalding of the Department of Health of Chicago has been appointed chairman of the Committee on Public Health of the American Medical Association.

All Medical Schools Now Have a Four-Year Course.—It is encouraging to note that while two years ago we reported three medical colleges as requiring only three years' course for a degree, last year there was only one three years' school left, and this year there is none.

Dallas Medical College.—Belated statistics from this Texas school, mentioned in the Educational Number, show that it has a faculty of 30; fees: matriculation $5, annual tuition $75, graduation $25 extra; the enrolment 1902-3 was 213, graduates 30. The next session opens Oct. 1, 1903.

FOREIGN.

International Congress of School Hygiene.—Such prominent men as Baginsky, Hoffa, Eulenburg, Cohn and Hueppe are interesting themselves in the first international congress for school hygiene. It is planned for next spring at Nuremberg.

“Archives Internationales de Chirurgie.”—Professor Ch. Willems of Ghent has issued the first number of this new periodical. The articles are published in the mother tongue of the writer. followed by a summary in four other languages, English, French. German. Italian or Spanish.

Touring Scholarships.—The Touring Club of France publishes in the last *Presse Médicale* a notice to the effect that two medical students, with high honors in their classes, will be given a free bicycle trip with a party touring through the Alps, down to the Mediterranean and home by the Rhone.

The Discoverers of Radium.—Last month the wife of Dr. P. Curie, professor of physics and industrial chemistry at the Paris Ecole Municipale. presented her thesis at the Sorbonne for the degree of doctor ès sciences. Her subject was “Radium.” whose properties were discovered by the collaborated research on uranium of this couple.

French Congress of Surgery.—The sixteenth annual meeting of the French Association de Chirurgie will be held at Paris, October 19 to 24, as previously announced. Prof. C. Périer will preside. and Duret. Lille, will deliver the address on “Tumors of the Brain,” and Dr. Hartmann on “Exclusion of the Intestine.” the two subjects appointed for discussion.

Medal for Cornil.—Professor Cornil of Paris reaches the time limit of his service at the Paris Hotel Dieu this year. He is to be presented by his friends with a medal commemorating his work in the history of pathology and bacteriology. A bronze copy of the medal will be sent to those who subscribe $5. to be sent to M. Alcan. 108 boulevard Saint-Germain. Paris.

Pathogenic Agent of Rabies.—Dr. A. Negri. Golgi's assistant at Pavia. announced last March the discovery of the specific micro-organism of rabies. He now states that he has examined more than 100 dogs with natural or laboratory rabies, and has never failed to find the specific micro-organism in the nerve centers. On the other hand, he has never found it in other dogs.

French Congress of Alienists and Neurologists.—The thirteenth congress convened at Brussels, August 1, and discussed the questions appointed for the order of the day with addresses by Claus, Antwerp, on the first theme, “Catatonia and Stupor”; by Klippel, Paris, on the second. “Histology of General Paralysis,” and by Trenel. Saint-Yon, on the third, “Treatment of Agitation and Insomnia in Mental and Nervous Disease.”

Grassi's Studies of Goiter and Cretinism.—When Grassi undertook the study of the etiology of malaria he went to reside in a malaria-infested district, where he spent months in collecting and examining mosquitoes. He has now entered on similar research in regard to the etiology of goiter and has taken up his residence in a small village in a valley on the Italian slope of the Alps, Cedrasco, in the Veltlin district. Our readers will remember that one of the large prizes was conferred on him at the Madrid congress.

Prize Offered for Pamphlet on Advantages of Bathing.—The German Public Bath Association offers three prizes of $25, $37 and $50 for the best pamphlets or circulars portraying the advantages of systematic bathing. The one winning the prize will be distributed and placarded for the purpose of educating the masses and also to arouse interest to provide better facilities for public baths. Competing articles should be sent to the office of the association, Karlstr. 19, Berlin N.W., VI., where further particulars may be learned on application.

German Medical Exhibit at the St. Louis Exposition.—The Germans are planning to make an elaborate exhibit of everything connected with medical instruction, especially in respect to diagnostics and therapeutics. Professor v. Bergmann is in charge of the matter, assisted by a committee, which includes Kutner, Kraus, Mikulicz, Orth, Rubner, Waldeyer, Wassermann and others, nearly all of Berlin. A circular inviting co-operation is to be sent forthwith to all the prominent institutes and firms throughout Germany.

Cause of the Pope's Death.—The diagnosis of the physicians, “catarrhal inflammation of the lung. with a hemorrhagic pleuritis,” was confirmed by the autopsy. Our Italian exchanges state that with the exception of this one lung and pleura. all the organs were found normal, except for a small patch of atheroma on the aorta. The number of “sovereign remedies.” amulets, charms and similar articles, sent to the physicians and to the Vatican from all parts of the world, to be used on the illustrious patient. is almost beyond belief.

Silver Jubilee of Professor Pawlow.—A committee has been formed in Russia to get up a “Festschrift,” to contain works on physiology and pharmacology, to be presented in February, 1904. to Prof. J. P. Pawlow on the occasion of the twenty-fifth anniversary of his entering on his scientific career. Professor Ssimanowski has the matter in charge. At the same time a fund will be endowed in Pawlow's name for a prize to be awarded for important works on physiology. Contributions for the endowment fund and for the “Festschrift” may be sent to Dr. Hanicke, Lopukhinskaya No. 12, St. Petersburg.

Circular Warning Against Venereal Diseases.—The German Preventive Association has empowered professors Erb, Jadassohn and Fraenkel to write the text for a warning circular to be sent to all the physicians of Germany for free distribution among their patients. It will point out the dangers of infection, the necessity of early and thorough treatment and the precautions to avoid infecting others. The association also recently voted to petition the government for more stringent measures against charlatans. citing particulars in regard to the harm done by their practices in the domain of venereal disease.

Lister Institute of Preventive Medicine.—A movement was started in London in 1896, the centenary year of Jenner's experiments in proof of the efficacy of vaccination, to perpetuate his name by some suitable memorial. It was finally decided to change the name of the British Institute for Preventive Medicine by substituting the word “Jenner” for “British.” It was found, however, that a commercial firm had a prior claim to the name Jenner Institute, and the complications arising were so many and varied that it was finally decided to give up the name. Instead of again assuming the old name, another man was honored and his name perpetuated by calling it the Lister Institute of Preventive Medicine. Jenner's name is also to be perpetuated, as there has been endowed a Jenner memorial studentship in connection with the Lister Institute.

The Approaching International Congress of Ophthalmology.—Elaborate preparations are being made for this congress, which will be held at Lucerne, Switzerland, Sept. 19 to 21, 1904. Only one official subject has been announced for discussion: “The Question of Indemnity as Regards the Value of an Eye, Lost or Injured.” Addresses on this subject have been requested from Axenfeld of Freiburg, Sulzer of Paris and Würdemann of Milwaukee. The committee of organization includes Snellen of Utrecht, Barde of Geneva, Dufour of Lausanne, Haab of Zurich, Pflüger of Berne, Landolt of Paris and Mellinger of Basle. The latter is the treasurer, and will send the admittance card on receipt of the fee of $5. Further particulars may be learned from Dr. de Schweinitz, 1401 Locust street, Philadelphia, or Dr. Coote, Quebec, Canada, who have been appointed correspondents for this country. Communications destined for the congress, if received before May 1, 1904, will be published and sent to each member of the congress with his admittance card. The reading out of the papers may thus be dispensed with, and the author will merely state his conclusions, thus giving time for discussions in the mornings and demonstrations in the afternoons. The committee are anxious to bring together at this congress all objects, old and new, relating to ophthalmology. They also plan an official banquet and numerous fêtes and excursions.

Panhellenic Medical Congress.—The second congress of Greek-speaking physicians and surgeons was held at Athens, May 17 to 23, as announced. A large number of communications on anatomy, physiology, etc., were presented, but most of the themes revolved around the study of malaria. Its relations to the circulatory and nervous systems were discussed, with addresses. Triantaphyllides of Batoum has noted 67 cases of cardiopathies in an experience with 12,000 malarial subjects. The endocardium was affected in 39, with lesions of the mitral valve in 23. In 16 the endocardium was ulcerated. In 26 cases the myocardium was affected; the pericardium in 3; the aorta in 1. Manoussos, Athens, regards malaria merely as a predisposing cause for heart affections, phlebitis, etc., but Coryllos, Patras, is dubious, and cited an instance in which a polyphlebitis developed in an old malarial subject, with fever, pains, tenderness and slight edema, all of which disappeared under treatment with the usual measures supplemented by constant use of quinin. Kanellis, Athens, stated that phlebitis frequently occurs consecutive to malaria, and that the latter may induce both functional and organic heart trouble, although organic lesions are rare. He has observed cases of a malarial aortitis in patches, usually on the ascending aorta, also of malarial aneurism of the aorta, angina pectoris from constriction of the coronaries, and of Raynaud's disease. Maroudhis, Athens, called attention to the great value of lime for extermination of mosquitoes. One part of quicklime to 100 parts of water will kill the larvæ in the water in two and one-half to five hours if pulverized, and if thrown into the water in chunks the larvæ are all killed in twenty-four hours at farthest. The powdered lime forms a coating on the surface which has a supplementary insecticidal effect. Koumoulis announced that cholera germs on dry bank bills all die in less than an hour.

Fifth Brazilian Medical Congress.—This successful national congress was held at Rio de Janeiro, June 16 to 20. The communications were mainly on the subject of tropical diseases and allied topics. Great interest was aroused by the results of serum treatment of plague reported by Dr. Victor Godinho of San Paulo. He is accustomed to administer the anti-plague serum by the intravenous route and in amounts much larger than elsewhere ventured, even as much as 60, 80 or 100 gm. of the serum at once. The effect on the hyperpyrexia is remarkable. The temperature drops several degrees almost immediately. He exhibited a large number of curves showing the benefit derived from the serum treatment in this respect, which practically arrests the disease process. Serum treatment of snake bites was discussed by Dr. Vital Brazil, also of San Paulo, who described important experiences with specific serum prepared at the institute in his charge. It proved much more effective than the control tests with Calmette's anti-venom serum. The members of the congress were so impressed with his success in curing snake bites with this anti-ophidic serum, as he calls it, that a resolution was passed urging the state to appropriate the funds necessary to send him to Europe to compare and make known what Brazil has accomplished in this line. He reported 21 cases in which persons known to have been bitten by venomous snakes and treated with the serum recovered with slight, if any, clinical symptoms, while even a fraction of a milligram of the venom causes severe symptoms in animals. In three of the cases the symptoms developed with extreme rapidity and gravity, but all subsided after injection of 20 to 60 c.c. of the serum. Two hours had elapsed in one case and three in another. He makes three kinds of anti-venom serum, including one for rattlesnake bites. His article is published in full in the *Revista Medica de S. Paulo*, No. 2, 1902, and No. 13, 1903. The *Brazil Medico* is publishing a detailed account of the congress.

LONDON LETTER.

Plague in India.

Plague is becoming more widespread every year in India, and the government is confronted with a very serious problem. The great difficulties in applying measures to check the spread of the disease which are offered by the ignorance and religious prejudices of the natives have been before described in The Journal. The disease is now widespread over all the most densely populated parts of India excepting Eastern Bengal and Assam. In April last over 30,000 deaths per week were recorded. The nature of the problem to be faced by the government will be realized if it is remembered that in each district of 1,000,000 inhabitants there are four administrative and one medical European officer who are more than fully occupied without any extra plague work. Coercive measures prove futile and have led to wholesale concealment and flight of infected persons to previous uninfected places. Compulsory isolation, evacuation and disinfection, except in the first few cases in any locality, have been abandoned as useless. In their place facilities for voluntary inoculation, for disinfection of infected houses, and for voluntary evacuation are afforded. A huge scheme for the inoculation of 10,000,000 of people in the Punjab was wrecked by the lamentable mishap in November, 1902, by which 19 natives died from tetanus following the inoculation (The Journal, April 25, p. 1153). A most favorable start had been made, 200,000 natives had been inoculated in the first two weeks, with the aid of a large number of specially imported doctors. After the mishap the inoculations had to be suspended. Later they were resumed, but the harm done was irrevocable. It is indeed remarkable that 300,000 more were carried out. The results, so far, have been satisfactory: the proportion of deaths to cases among the inoculated was 25 per cent., among the uninoculated 60 per cent. The advantages of substituting voluntary for compulsory measures in Allahabad is shown by the following facts: When the disease was established compulsory measures were abandoned and the system was adopted of simply offering advice and assistance. This policy established good feeling between the people and the authorities and at least checked the ravages of the disease. Only 7.5 per cent. of the houses disinfected during 1901-02 had cases of plague in 1902-03, but of 51 infected houses which escaped disinfection 43 showed return cases of plague. In the last season's work in only 0.5 per cent. of disinfected houses did cases recur within the next ten days, and in 0.4 per cent. after ten days. The people are beginning to learn in the dear school of experience the lesson to evacuate their villages as soon as plague appears or as soon as rats begin to die.

The Anti-Malaria Campaign.

The Liverpool School of Tropical Medicine has just issued a most important and practical paper on the prevention of malaria in the tropics. In 1902 the school sent an expedition to the Gambia, which was conducted by Dr. Dutton. Malaria was found very prevalent in the colony. Of the native children examined 80 per cent. harbored malarial parasites in their blood. The liability of infection of Europeans occurred soon after the rains were established, and lasted up till the end of November. Mosquitoes were found to be largely bred by white men on their premises. In one factory yard 6 barrels, 17 tubs and 8 small wells were found to be breeding places of culex, stegomyia and anopheles. During the dry season, November to May, there are no natural breeding places for mosquitoes in Bathurst. The people breed mosquitoes solely on their own compounds. A crusade against mosquitoes has been inaugurated. One hundred and thirty-one cartloads of old tin pots and other rubbish have been removed.

Correspondence.

The Work of Mr. Robert Jones.

Liverpool, July, 1903.

To the Editor:

Liverpool is known to everyone interested in the treatment of deformities as the home of the late Hugh Owen Thomas, whose original and practical mind has left an indelible impression on surgical technics. Carrying on the work in the same building, and inspired by at least an equal enthusiasm, his gifted nephew and successor, Mr. Robert Jones, is conducting one of the most remarkable orthopedic services in existence. This work is well known to specialists, but must be seen to be appreciated, and as it was the writer's privilege, through Mr. Jones' courtesy, to observe the work for several days, these impressions have been jotted down with the feeling that it deserved to be more widely known among the profession at large.

Mr. Jones begins his day after an early breakfast by visiting his patients at their homes or in the various private hospitals where they have been placed. About 11 o'clock he returns to his office, where he passes quickly from one patient to another in the various rooms, spending but a moment with each, but seizing at once with an almost intuitive instinct the nature of the affection and the essential indication for treatment. Small operations, such as tenotomies and mobilization of adherent joints, are often done on the spot, his lively optimism and cheerful tact being in many cases the only anesthetic employed. Sinuses are dressed, fractures splinted, apparatus applied and joints *x*-rayed by several experienced associates, and soon the place is a veritable hive of interested activity, a hopeless labyrinth to one without the clew. A dozen cases are started, none are finished, patients crowd the rooms and wait in corridors and closets, everything to the outsider is hopeless confusion, but one thread after another is picked up by the busy master, one difficulty after another solved on the spot, order is brought out of chaos, and in an incredibly short space of time, each patient had had the proper diagnosis, and the proper treatment applied, and has been instructed about home management and when to call again.

This attempt at a description is a sober, but inadequate, account of what actually takes place. The means used are of the simplest description: five or six types of simple soft steel supports are used for the ordinary cases, and various sizes of these are kept in stock, so that relief may usually be had at the first visit; these supports are made on the premises, the dressings are as simple as the splints. An orthopedic instrument maker is always in attendance to take orders for more elaborate appliances when needed; no plaster of paris is used. The more serious operative cases are referred to one or another of Mr. Jones' hospital services.

The writer has never seen anything approaching this mastery of the clinical material or of the technical means. This was equally displayed in the work at the Royal Southern Hospital, where Mr. Jones has a surgical service. On his regular operating day, Wednesday, he often exceeds twenty operations. On the Wednesday at which the writer was present he did twenty-six; beginning at 2:30 p. m. he finished at 9:30, doing every operation but one himself, which was done by the house surgeon. The operations were done on a table, which was also used as a stretcher, and by having two of these stretcher-tables and two anesthetists, the operations followed each other with almost clocklike punctuality at an average interval of fifteen minutes, and without any appearance of haste. When one considers that this included dressings in most cases, and that there were three knee resections, and other operations of equal importance, the performance seems little short of marvelous. All the operations but one were undertaken for the relief of deformity or joint disease. Among those of special interest were the excision of large pieces of the adductors of the thigh for spastic paraplegia, excision of the peronei for persistent peroneal spasm, excision of a large diamond of skin from the front of the arm and forearm, with suture of the edges for flail-elbow, excision of a wedge of bone from the top of the foot for severe paralytic pes cavus in an adult, correction of knock-knee and of a hip deformity, the section of the bone being made with a modified Adams' saw, arthrodesis of the ankle with removal of a wedge of bone for paralytic calcaneo-valgus, and several cases of club-foot and flat-foot corrected by the Thomas wrench, in the use of which Mr. Jones is exceedingly expert. Here, also, no plaster was used, simple adjustable splints being in readiness to hold the part in its corrected position. Many of the club feet and rhachitic deformities were sent home the same day.

Here, as in the office practice, the striking thing was the clear and quick appreciation of the gist of the matter in hand, and the instant application of the simple and effective remedy. Another striking feature of the work was the hearty and intelligent co-operation of his associates. Mr. Jones has attracted to himself a group of young men of skill and experience, who vie with each other in their devotion to him and to the work, and whose team play, if I may use the expression, is remarkably effective; there is no question of precedence, the right man is always on hand to do the right thing in the right way. The spirit of the place is as fine as the work and personality of the master. Owing to Mr. Jones' approaching vacation the writer was unable to see his regular Saturday out-patient clinic at the hospital or his free Sunday at the office, where he treats some 7,000 cases on the alternate Sundays of a year, but enough was seen to make an impression that can never be forgotten. HENRY LING TAYLOR.

The Transmission of Yellow Fever.

NEW YORK CITY, Aug. 11, 1903.

To the Editor:—On my arrival from Cuba I perused with great interest the article of Dr. James Carroll on "The Transmission of Yellow Fever," published in THE JOURNAL, May 23, 1903, the replies made to it by Drs. Carlos I. Finlay and Aristides Agramonte, both of Havana, Cuba, and Dr. Carroll's last rejoinder.

I wish briefly to state a few facts on the matter discussed by pointing out the principal differences between the experiments of Drs. Finlay and Delgado, on one side, and the Army Yellow Fever Commission on the other. The contrast is truly remarkable, and fully explains the point in question.

Finlay and Delgado were trying to find in the *culex* mosquito a prophylactic agent by means of which they could make non-immune persons immune to yellow fever, very much as it happens with the vaccine virus against smallpox; and the army commission were trying with the *Stegomyia fasciata* mosquito to produce true yellow fever with all its dangers and natural virulence.

Finlay and Delgado claimed they found that in from two to six days the contaminated mosquito causes an attenuated attack of the disease (the so-called "acclimation fever") which renders immune the person so bitten. The Army commission found that in that space of time nothing at all happens to the person so treated, and that it requires a lapse of from twelve to seventeen days, or longer, for the mosquito to transmit genuine yellow fever, not acclimation fever.

Finlay and Delgado did not say to what sex their culex mosquito belonged. The Army commission distinctly stated that it was the female *Stegomyia fasciata* mosquito, and only the female that transmits yellow fever.

Finlay and Delgado declared that the culex mosquito was one way in which yellow fever can be conveyed from a sick person to a healthy non-immune, leaving to be supposed that the disease might also be transmitted by other means. The Army commission emphatically asserted that the female *Stegomyia fasciata* mosquito is the only and exclusive means by which yellow fever is transmitted from one person to another.

Finlay and Delgado had no idea of exterminating mosquitoes because they wanted them, as a prophylactic agent to render immune the persons liable to get yellow fever. The Army commission clearly and distinctly demanded the extermination of mosquitoes because they were the true agent of propagation of yellow fever. To such a point the army commission affirmed this as to state that "in the absence of the mosquito the yellow fever patient is harmless."

If we are to judge a scientific medical discovery by the statistics presented in its favor, Dr. Carlos I. Finlay has no reason to claim the discovery of the transmission of yellow fever by mosquitoes. He is perhaps entitled to the suggestion, although some claim might be made in favor of Dr. Josiah C. Nott, Mobile, Ala., who in 1848 published an article on "Yellow Fever Contrasted with Bilious Fever. Its Mode of Propagation and Probable Insect or Animalcular Origin," but nothing else.

Out of a total of 87 persons inoculated by mosquito bite by Finlay, he obtained one case which presented a mild albuminuric attack, thirteen cases in which only "acclimation fever" occurred, and seventy-three negative results.

It is true that since then Dr. Finlay has changed his former opinion, as Dr. Carroll well said: "The original theory of Finlay has been variously modified by him from time to time to meet possible contingencies."

A. M. FERNANDEZ YBARRA, M.D.

The Turning Down of the Old Practitioner.

PLYMOUTH, IND., Aug. 8, 1903.

To the Editor:—I notice in THE JOURNAL, Aug. 8, in the report of the Ohio State Board of Registration, that candidate 172, graduate of Columbus Medical College, class of 1878, failed with a per cent. of 65 5/9, and, in fact, all who failed are old graduates with the exception of one, and that one a foreigner. All who passed are graduates of recent date. Now the physician who graduated in 1878, with about a quarter of a century of practical experience to his credit, ought not to be turned down by the Ohio board, or any other state board, and state reciprocity should be so arranged that a physician licensed by the state in which he practices, and endorsed by the medical profession or county or state medical societies, should obtain a license to practice in any state on presentation of his state license and recommendation by the secretary of the state board of medical registration which issued that license showing that he is in every way eligible for registration.

The trouble with the so-called reciprocity is that it has too much red tape. A physician who can legally practice in one state ought to be legally able to practice in another state without having to submit to the indignity of a technical examination before a board who are not appointed for their qualifications, but for their political influence.

A licensed physician in any state should be able to practice in any state or territory that is under the American flag, and any physician who has legally practiced continually for ten years or more ought not to be questioned regarding his capabilities, but should be considered competent and recognized as such.

T. A. Borton.

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PERSISTENT HEMORRHAGE DURING AND FOLLOWING OPERATION.

Manila, P. I., July 9, 1903.

To the Editor:—1. In cases of non-coagulability of the blood where an operation has been begun for, say, cholelithiasis, is it possible to arrest the hemorrhage from the incised abdominal muscles, the abdomen not having been penetrated?

2. What would be the proper procedure when excessive oozing is encountered from the incised muscles in a case of operation of cholecystotomy where there had been no penetration of the abdominal cavity—to stop the operation or to enter the abdominal cavity and then, by means of sutures of the cut muscles, stop the hemorrhage?

3. Are deaths common from hemorrhage in cases where only the muscular tissue is involved, such as in an incision for reaching the liver or its adnexa without penetration of the abdominal cavity?

H. W. Y.

Ans.—1. Non-coagulability of the blood and persistent hemorrhage are not necessarily associated conditions. In hemophilia the blood may coagulate firmly after it leaves the vessels, yet fatal oozing occurs from even a slight wound in spite of all effort to prevent. Fatal hemorrhage from persistent oozing has also followed operations on the gall tracts in the presence of jaundice, also in leukemia. The question of whether the incision penetrated the abdominal cavity or only extended part way through the wall would not influence the question of hemorrhage.

2. This question does not admit of a categorical answer. The judgment and experience of the surgeon in charge and the nature of the case would have to determine the best course to pursue.

3. Deaths from hemorrhage in cases mentioned are not common, but may occur in the conditions mentioned in answer to Question 1. The depth of the incision, whether it extended completely or only partially through the abdominal wall, would not influence the result.

State Boards of Registration.

The District of Columbia Board of Medical Supervisors report by Dr. Wm. C. Woodward, secretary, that at the examination held at Washington, July 9 to 14, 1903, the number of subjects examined in was 17; total written questions, 80; percentage required to pass, 75. The examination was partly oral and partly written. There were 25 examined, and 23 passed:

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
379	R.	Columbian University	1903	90.12
377	R.	Columbian University	1903	94.93
375	R.	Columbian University	1903	90.90
398	R.	Columbian University	1903	93.43
396	R.	Columbian University	1903	92.50
391	R.	Columbian University	1903	90.68
390	R.	Columbian University	1903	86.71
389	R.	Columbian University	1903	90.31
384	R.	Georgetown University	1902	88.59
397	H.	Hahnemann Med. Coll., Philadephia.	1903	85.46
393	H.	Hahnemann Med. Coll., Philadelphia.	1903	87.03
387	R.	Howard University	1902	89.31
380	R.	Howard University	1903	81.04
378	R.	Howard University	1903	77.00
394	R.	Howard University	1903	79.59
383	R.	Johns Hopkins University	1903	84.09
382	R.	Johns Hopkins University	1903	87.87
399	R.	Johns Hopkins University	1903	88.28
388	R.	National University (D. C.)	1903	85.40
386	R.	National University (D. C.)	1903	81.56
392	R.	National University (D. C.)	1903	80.78
376	R.	University of the City of New York.	1897	86.47
385	R.	University of Pennsylvania	1895	91.90
		FAILED.		
381	R	Howard University	1903	74.78
395	R.	Howard University	1903	74.43

The South Carolina State Board of Medical Examiners, of which Dr. S. C. Baker, Sumter, is secretary, reports the examination held at Columbia, May, 1903, as follows: Number of subjects examined in, 15; total questions, about 125; percentage required to pass, 75; written examination; total number examined, 51; passed, 47; failed, 4.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
2	R.	Medical College of South Carolina	1901	85.4
7	R.	Medical College of South Carolina	1901	94.1
13	R.	Medical College of South Carolina	1901	77.0
17	R.	Medical College of South Carolina	1901	82.5
24	R.	Medical College of South Carolina	1901	82.5
25	R.	Medical College of South Carolina	1901	75.5
31	R.	Medical College of South Carolina	1901	77.1
32	R.	Medical College of South Carolina	1901	79.0
33	R.	Medical College of South Carolina	1901	84.5
34	R.	Medical College of South Carolina	1901	91.1
35	R.	Medical College of South Carolina	1901	91.3
36	R.	Medical College of South Carolina	1901	76.0
39	R.	Medical College of South Carolina	1900	89.1
42	R.	Medical College of South Carolina	1901	75.4
44	R.	Medical College of South Carolina	1901	85.5
50	R.	Medical College of South Carolina	1901	82.1
53	R.	Medical College of South Carolina	1901	91.2
54	R.	Medical College of South Carolina	1901	76.1
20	R.	Medical College of South Carolina	1901	84.4
3	R.	Meharry Medical College	1903	77.0
47	R.	Meharry Medical College	1903	99.4
9	R.	University of Maryland Med. Dept	1902	82.4
14	R.	University of Maryland Med. Dept	1903	90.1
18	R.	University of Maryland Med. Dept	1903	89.2
19	R.	University of Maryland Med. Dept	1902	87.1
26	R.	University of Maryland Med. Dept	1903	88.0
38	R.	University of Maryland Med. Dept	1903	90.2
41	R.	University of Maryland Med. Dept	1902	85.4
51	R.	University of Virginia Med. Dept	1901	92.6
5	R.	Atlanta Medical College	1894	76.2
15	R.	Atlanta Coll. of Phys. and Surgs	1903	89.0
6	R.	Leonard Medical College	1903	85.6
30	R.	Leonard Medical College	1903	83.6
22	R.	Leonard Medical College	1903	81.1
23	R.	Leonard Medical College	1903	84.2
43	R.	Leonard Medical College	1903	77.0
8	R.	Hosp. Coll. of Med., Louisville, Ky	1902	77.6
11	R.	Woman's Med. Coll. of Pa	1895	84.5
21	R.	North Carloina Medical College	1903	83.5
49	R.	North Carolina Medical College	1902	85.6
27	R.	Tennessee Medical College	1899	80.0
37	R.	Southern Medical College, Atlanta, Ga.	1895	77.5
40	R.	Maryland Medical College	1903	75.5
4	R.	Med. Dept. University of Georgia	1903	84.6
45	R.	Med. Dept. Univ. of Cincinnati	1902	82.0
48	R.	Coll. of Phys. and Surgs., Baltimore	1903	88.5
52	R.	Medico-Chir. Coll., Philadelphia	1902	78.5
		FAILED.		
1	R.	Atlanta Coll. of Phys. and Surgs	1903	71.2
16	R.	Leonard Medical College	1902	*77.2
28	R.	University of Georgia	1899	64.1
46	R.	Maryland Medical College	1902	71.0

* While this man's general average was 77.2, he made only 40 on practice of medicine.

Deaths.

Andrew Russell Barbee, M.D. University of Pennsylvania, Philadelphia, 1851, Point Pleasant, W. Va., died, August 31, from heart disease, aged 76. He was surgeon in the Confederate service during the Civil War, member of the state senate, president of the U. S. Board of Pension Examiners, secretary of the State Board of Health, etc. While in the senate of West Virginia he was the author of the bill regulating the practice of medicine and surgery, and that creating the State Board of Health.

Thomas J. Yarrow, M.D. University of Pennsylvania, Philadelphia, 1861, died at his home in Philadelphia, August 6, as a result of an injury sustained when thrown from his carriage last October, aged 63. He served in the Union Army during the Civil War.

William H. Amiss, M.D. University of Pennsylvania, Philadelphia, 1853. died at Sperryville, Rappahannock County, Va., August 8, aged 73. During the Civil War he was surgeon in the Army of Northern Virginia, C. S. A.

Ernest H. Lueke, M.D. Western Reserve University, Cleveland, 1898, of Cleveland, was drowned while swimming in Lake Erie, August 5, aged 25.

Adolph Cudell, M.D. Western Reserve University, Cleveland, 1898, of Cleveland, was drowned while swimming in Lake Erie, August 5.

J. W. Shaw, M.D. Saginaw Valley Medical College, Saginaw, Mich., 1901, died at his home in Long Beach, Cal., August 1, aged 37.

John N. Wheat, M.D. Western College of Homeopathic Medicine, Cleveland, 1852, died at Austin, Minn., July 25, aged 86.

John M. Trembly, M.D. Miami Medical College, Cincinnati, died at his home in Butler County, Ohio, July 24, aged 73.

John H. Kinyoun, M.D. New York University, 1859, died at his home in Centerview, Mo., July 27, aged 78.

Deaths Abroad.

Dr. Sigmund Fuchs of Vienna died at Borderbrühl, July 28, aged 44. He was professor of physiology and chief of the Institute of Physiology at Vienna. His name is well known by his numerous contributions to scientific literature.

Dr. Immanuel Munk, an eminent physiologist and chief of the Institute of Physiology at Berlin, died there July 31, aged 51.——Dr. Leopold Fischer, privat docent of psychiatry at Heidelberg, died July 30, aged 73.——Dr. Rudolf Trzebicky, professor of surgery at Cracow, died there July 22, aged 42. ——Dr. J. Bougle, one of the younger set of medical men and journalists at Paris, son and grandson of physicians, died there, July 20, aged 35. He was a collaborator on the *Archives Gén. de Médecine*, and had recently published a large work on the surgery of arteries, veins, lymphatics and nerves.

Dr. Nocard, the famous bacteriologist, professor at the veterinary school at Alfort, France, of which he was the chief for several years, died there August 1, aged 53. His last prominent appearance was at the Antituberculosis Congress at London, where he maintained his views in regard to the transmissibility of bovine tuberculosis to man, combating those advanced by Koch. Nocard's communications to the *Académie de Médecine* and to scientific journals have been important contributions to our knowledge of human and animal pathology and the relations between them. He died after a brief illness, in the midst of active work.

Dr. W. S. Playfair, one of the best-known obstetricians and gynecologists in Great Britain, died, August 13, at St. Andrews, Scotland. He received his degree of M.D. from Edinburgh in 1856, but possessed many other degrees and qualifications, both ordinary and honorary. His text-book on obstetrics has been one of the standards in Great Britain, and his numerous other contributions have maintained his reputation. He has held many high honorary and other positions in his own country, and has been the recipient of high honors from foreign countries. His reputation as a medical teacher was high; he was long connected with the chair of obstetric medicine in King's College. Beside his several obstetric works, which have gone through many editions, he was co-editor with Prof. Allbutt of a "System of Gynecology" published in 1896, and of numerous papers in medical journals, including some on subjects not directly related to his specialty. He is remembered as having had the unfortunate experience of being mulcted $60,000, in a suit a few years ago. It hardly seemed to the medical profession that justice was done him in that case. Of late years he has been less conspicuous, but his death leaves a notable gap among the prominent physicians in Great Britain.

Book Notices.

A Reference Handbook of the Medical Sciences. Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. A New Edition, Completely Revised and Rewritten. Edited by Albert H. Buck, M.D., New York City. Volume VI. Illustrated by Chromo-lithographs and 763 Half-tone and Wood Engravings. Cloth. Pp. 1004. Price, $7.00 per Volume. New York: Wm. Wood & Co. 1903.

As volume after volume of the new edition of this magnificent work appears, one becomes more and more impressed with two facts: one is that since the first edition appeared the progress of medicine in all its departments has been most wonderful; the other is that this work represents the medicine of to-day as the first edition represented that of its time. This means that much of the old matter has had to be rewritten, and that not a small part is entirely new. Many of the articles in each volume are on subjects that were not thought of fifteen years ago, and some of these are so full as to make important monographs of themselves. This large amount of new matter has made it necessary to reduce the space occupied by some subjects that were then considered important, but which now are of little interest; and not a few subjects that appeared in the former edition are omitted entirely in the present one. But the editorial rejections, as far as we notice, have been wisely made, and nothing of importance is omitted. In a volume as large as this one, covering so many subjects by so many authors, it might seem easy to find something to criticise; but we find nothing. The selection of men to write on the various subjects has been wisely made, and the amount of space allotted to each subject has been made with a due regard to its importance or otherwise. The work, when completed, if the volumes yet to come are as excellent in every way as those which have already appeared, will be the most important and valuable encyclopedia of medicine in the English, if not in any, language.

Bacteriological Chart in Colors. For Free Distribution. New York: M. J. Breitenbach & Co. 1903.

This chart, 17 by 36 inches in size and intended to hang on the wall, shows in sixty colored plates the various pathogenic organisms. The chart, we presume, is not intended to be scientifically exact and true to nature in every case, but rather to call attention to the general characteristics of the organisms illustrated. There seem to be included some organisms of doubtful etiologic relations, or at least which are not yet generally recognized. Nevertheless, the chart is one that will prove of interest and value to the general practitioner.

Obstetrical Nursing for Nurses and Students. By Henry Enos Tuley, M.D., Louisville, Ky., Professor of Obstetrics, Kentucky University, Medical Department. Cloth. Pp. 202. Price, $1.00 net. Chicago: G. P. Engelhard & Co. 1902.

This is a very practical little work. The author evidently fully appreciated the needs of the obstetric nurse and has given us a book that, in a compact form, fully supplies all the information the ambitious nurse will need. The limitations of the functions of the obstetric nurse are recognized, consequently she is not encouraged to assume the rôle of obstetrician as well as that of nurse.

Microscopy and Bacteriology. A Manual for Students and Practitioners. By P. E. Archinard, A.M., M.D., Demonstrator of Microscopy and Bacteriology, Tulane University of Louisiana, Medical Department. Series Edited by V. C. Pedersen, A.M., M.D., Instructor in Surgery and Assistant Anesthetist at the New York Polyclinic Medical School and Hospital. Illustrated with 74 Engravings. Cloth. Pp. 210. Philadelphia and New York: Lea Brothers & Co.

All that is claimed for this work is that it affords a brief but clear presentation of the essentials, a thorough knowledge of which is necessary as a foundation for a sound superstructure. It is a practical little book.

Medical Organization.

Marshall County (Miss.) Medical Association.

This was organized at Holly Springs, July 30, under the guidance of Dr. K. P. Perkins of Batesville, councilor. Dr. R. H. Peal was elected president and Dr. Robert A. Seale secretary-treasurer.

Franklin County (Iowa) Medical Association.

The officers of this new organization are: President Dr. Charles H. Tidd, Geneva; secretary, Dr. J. Clinton Powers, Hampton; treasurer, Dr. Abraham J. Hobson. Nearly all the practicing physicians of the county are members.

Lafayette County (Miss.) Medical Society.

This was organized at Oxford, July 29, with the assistance of Councilor K. P. Perkins of Batesville. Dr. Wade S. Banks, Abbeville, was made president; Dr. F. Baxter Linder, Oxford, vice-president; Dr. Peter W. Rowland, Oxford, secretary and treasurer.

De Witt County (Tex.) Medical Society.

This was organized July 30, half of the eligible physicians of the county participating. Dr. Joseph M. Reuss, Cuero, was elected president; Dr. Wm. C. Swain, Cuero, vice president; Dr. W. R. Gillett, secretary; and Dr. Oscar J. Mugge, Cuero, treasurer.

Titus County (Tex.) Medical Society.

This society was organized at Mt. Pleasant, Aug. 4, under the direction of Dr. Holman Taylor of Marshall, councilor for the district. Dr. S. R. Crabtree was elected president, Dr. Thomas S. Grissom, vice-president, and Dr. Walter J. Matthews, secretary.

Madison County (Ohio) Medical Society.

At London, July 31, this society was organized with these officers: Dr. H. S. Quinn, West Jefferson, president; Drs. Wm. H. Christopher, London, and A. J. Welsh, Mt. Sterling, vice-presidents; Dr. Albert Strain, London, secretary and treasurer. Dr. Theodore W. Rankin of Columbus was present and made an address.

Harris County (Tex.) Medical Association.

Under the guidance of Drs. John T. Moore, Galveston; Witten B. Russ, San Antonio, and Walter Shropshire, Yoakum, this association was formed at Houston, July 27. Dr. Edward M. Armstrong was elected president; Dr. James H. Bute, vice-president; Dr. J. Edward Hodges, secretary, and Robert T. Morris, treasurer.

Societies.

Medical Society of the Missouri Valley.—The date of meeting in Omaha has been changed from Sept. 17 to Sept. 14 and 15, 1903.

American Association of Obstetricians and Gynecologists.—This association will hold its sixteenth annual meeting at Chicago, Sept 22 to 24, 1903, under the presidency of Dr. L. H. Dunning, Indianapolis. The Auditorium Hotel Annex has been selected for the headquarters, the management of which should be addressed concerning rooms and rates. Dr. J. B. Murphy, 100 State street, is the chairman of the committee of arrangements, and will gladly furnish any information to members and guests on application. Dr. Murphy may also be addressed relating to accommodations at the Auditorium Annex or other hotels.

Massachusetts Association of Boards of Health.—This association was entertained at Gallops Island, Boston Harbor, at its quarterly meeting, July 30, by the Boston Board of Health. This island is the quarantine station of the port. One paper read was by Dr. B. R. Ricards on the value of disinfectants, a report of his experiments in the Boston Board of Health Laboratory. His evidence goes to prove the great efficiency of carbolic acid and allied cheaper products. Prof. Wm. L. Underwood of Belmont, a lecturer at the Massachusetts Institute of Technology, gave a very interesting lecture with the stereopticon on mosquitoes. He has discovered a big mosquito in the woods of Maine which will devour culex and anopheles and leaves man alone. Until its practical usefulness in this way is demonstrated, however, he commended the use of a pyrethrum smudge, much in the same way it is now used for that purpose in Havana, Cuba.

BRITISH MEDICAL ASSOCIATION.

Seventy-first Annual Meeting, held at Swansea, Wales, July 28 to 31, 1903.

(By Our Special Representative.)

(*Continued from page 463.*)

The President, Dr. Thomas Frederick Griffiths, Swansea, in the Chair.

First General Meeting.

The first general meeting of the members was held Tuesday, July 28, at 2 p. m., in the King's Hall.

The financial statement for the year 1902 was presented, showing a profit for the year of about $2,400.

The first annual representative meeting was held at 3:30 p. m., with Sir Victor Horsley as chairman. Among the reports considered at this meeting was the report of the council which dealt with the imperial vaccination league, the *British Medical Journal*, the superannuation fund, scientific grants committee, the special chloroform committee, the medico-political committee, the vaccination acts, etc.

The president's address was delivered at the Albert Hall at 8 p. m. by President Griffiths, who selected for his subject the following:

The Evolution of Antiseptic Surgery and Its Influence on the Progress and Advancement of Bacteriology and Therapeutics.

Among other things he described the growth of antiseptic surgery. He said the architect has been very rightly called into service to further the practical application of Listerism. This is especially to be noticed in the construction of modern hospitals, and in the addition of new operating theaters to old institutions. They are invaluable in surgical work.

Some thirty-six years ago the mortality from major operations in the London hospitals was about 33 per cent. This high mortality, after major operations, is now reduced to about 3 per cent., and, after minor operations, practically to *nil*, as the outcome of Lister's antiseptic surgery.

BACTERIOLOGY AND IMMUNITY.

The brilliant discoveries of Pasteur and the evolution of antiseptic surgery by Lister gave a great impetus to the study of bacteriology, with the result that new and unexpected discoveries were made as to the part played by bacteria in nature. These micro-organisms have a definite and important place in the scheme of nature. They are distinctly separated by gradation from both the vegetable and animal kingdoms. They form a kingdom of their own which may be termed the "bacterial kingdom." Their very existence appears to be antagonistic to both animal and vegetable life. Their object in nature is evidently one of destruction—the breaking up of complex molecules of animal and vegetable substances into simpler combinations. They are Nature's scavengers, and undoubtedly they are the causal agents of all the communicable diseases to which flesh, and not human flesh alone, is heir.

The varieties of bacteria, differing in size, form, action, character and power for good or evil, are almost endless.

A bacterium may have two states or stages of existence. One is the active or vegetative stage, and the other the spore or resting stage. In the latter state, which may be compared to that of a hard nut or seed, it may remain dormant for a long time until the surroundings favor its development into the active state. This, he showed, has an important bearing on the treatment and etiology of specific diseases.

Pasteur's and Davain's discoveries led up to Koch's investigation. Davain discovered bacteria in the blood of animals suffering from anthrax in 1863, thus confirming the observations made by Pollender in 1849. Koch repeated the experiments and finally established in 1876 the causal relationship of bacteria and disease. Tuberculous disease had been proved by Villemin to be inoculable, and in some countries it had long been believed to be infectious, but it remained to Koch to demonstrate, in 1882, that tuberculous disease was due to the agency of micro-organism. He proved that a bacillus played a part in the production of tuberculosis which is analogous to that which is played by torula cerevisiæ (yeast bacillus) in fermentation. The tubercle bacillus feeds, grows, multiplies and produces its toxin at the expense of the surrounding tissues, very much in the same way as the yeast bacillus feeds, grows, multiplies and produces its toxin (alcohol) at the expense of the saccharin solution in which it is placed. The principle discovered by Pasteur in the processes of fermentation and putrefaction was proved, after years of close investigation by Koch, to be absolutely identical in the development of tuberculous disease in the animal body. He demonstrated the bacillus in the tissue, and cultivated the organism outside the body, and observed the formation of the toxin. The same remark may be applied to diphtheria (diphtherization). Diphtheria bacillus grows, feeds, and multiplies on the mucous membrane and there forms its toxin.

THERAPEUTICS.

Both bacteriology and Listerism have greatly helped to advance our knowledge of the action of medicine. Therapeutics have now been raised in many departments from the plane of empiricism to that of science. Peruvian bark, the active principle of which is quinin, was accidentally discovered to be of great value in the treatment of malarial fever. The discovery was the result of observation, but the knowledge gained was entirely empirical. Prior to the discovery of the hemameba and the observation of its action on the red blood corpuscles, and until the listerian property of quinin was ascertained, we had no idea how the drug acted as a curative agent. It is now evident that it acts simply as an antiseptic in destroying the malarial parasites which are conveyed to the human body by mosquitoes, and it is now very doubtful whether it has any other beneficial action as a therapeutic agent. The world is greatly indebted to Dr. Manson and to Dr. Ross for their discovery of the part played by mosquitoes in the causation of malarial fever.

Salicin.—Very much the same remarks may be applied to salicin, salicylic acid, and the salicylates, which are powerful antiseptics. The discovery that these drugs were specially valuable in the treatment of rheumatic fever was accidental also. It is now acknowledged that rheumatic fever is due to a micro-organism which probably gains access to the circulation through the tonsils or mucous membrane of the pharynx. Sore throat is a frequent precursor of acute rheumatism. It is probable that scarlatinal sore throat predisposes the patient to infection by rheumatic micro-organisms, over which the salts of salicin have a lethal action.

Mercurial salts are the most efficient antiseptic agents we possess in surgical practice, and it may be argued that the therapeutic action of mercury, when administered internally, is to be accounted for to a great extent by its antiseptic property; hence its specific action on syphilis, which is now stated to be a bacterial disease. It has been recognized for many years that mercury is a valuable remedy in tonsillitis, which is also, no doubt, caused by micro-organisms. Dr. Jamieson of Edinburgh pointed out some years since that mercuric chlorid is most valuable as a bactericide in the treatment of scarlet fever.

Other examples were cited.

SANITATION.

Increased infant mortality and diminished birth-rate are two ugly facts which are not to the credit of our country or of modern civilization. The increased mortality among infants is due to diarrhea and enteritis, and it has been found that the increase due to these two causes is seven times greater in towns than in the country. It has also been found that the mortality from diarrhea is much greater among infants artificially fed than among those which are fed at the breast alone or in part. No doubt much of this increased mortality is due to the ignorance and carelessness of mothers and nurses; but it is also an illustration of a defect in sanitary administration due to the optional character of the acts and regulations. There are in existence model rules and regulations for the cleanly and sanitary conduct of dairy farms, which, though they have been approved and sanctioned by the local government board in England, are not adopted, or, where they have been formally adopted, are not enforced in rural sanitary districts. The medical officers of health of our great cities complain that, owing to the neglect of rural sanitary authorities, the milk supplied for consumption, especially in the poorer quarters of large cities, is often either decomposing or putrescent.

Notwithstanding the defects in the administration of the Public Health Act, the country is often under a debt of gratitude to sanitary authorities and medical officers of health for protecting our shores from the invasions of plague and cholera from time to time. The importation of plague to Glasgow and to the London docks, a couple of years ago, is still fresh in our memories, and physicians have not yet forgotten the feeling of relief experienced when they were assured that the causal agents had been destroyed and that the people had safely escaped a terrible calamity. Great credit is due to the sanitary authorities for their promptitude, energy and determination in the performance of their duty on these occasions. The same may be said of our local authorities generally when an epidemic of smallpox, typhoid fever, or some other infectious disease attacks a populous district. Unfortunately the public is apathetic in these circumstances; it must be hard hit, and many lives must be lost, before it wakes up to realize the situation, and give material help to the medical officer. People are indifferent and accustomed to the endemic and preventable diseases persistently destroying a large percentage of the population. This may be attributed to three causes:

1. The absence of a strong central authority.
2. The ignorance, apathy and prejudices of the smaller authorities.
3. The objections and the loud protestations of faddist and conscientious objectors to vaccination, objectors to the Contagious Diseases Act, objectors to the advancement of medicine by experiments, etc.—a class of persons who, regardless of the consequence to others, claim freedom to do as they please in matters pertaining to health, freedom to do what is unjust and wrong, freedom to endanger the lives of others.

He said it is evident that the reform needed is greater central authority and greater power to county councils over public health administration within their respective areas.

The county councils, urban and rural sanitary authorities should be under compulsion to appoint medical officers of health who should be precluded from private practice and should have power to compel the combination of small sanitary authorities into conjoint areas sufficiently large to secure the services of an efficient medical officer who should give his whole time to public health work. The service should be sufficiently tempting to induce some of the best talent in the profession to enter it. One of the duties of the medical officer should be to deliver popular lectures on sanitary questions and hygiene generally, in his district for the purpose of educating the public on the vital importance of observing the ordinary laws of health.

Infective and Infectious Diseases.

The address in medicine was delivered by Frederick T. Roberts, M.D., B.Sc., F.R.C.P., London, who stated that this subject is one that appeals to the entire profession in all its different branches, and by no means least to the general practitioner.

PRACTICAL ETIOLOGY.

The first question to be determined from the point of view of practical etiology is whether a particular disease is infectious, in the true sense of the term, or not? In the next place, it is very desirable, with regard to each individual infectious disease, to have as definite a knowledge as possible concerning its period of incubation; the degree of infectiousness; and the period of infectivity, that is, how long infection lasts in a particular case? In relation to many of the best known affections belonging to this group, these points have been now established fairly accurately, but there is still much to be done in this direction.

The most important and striking advance which has been made in relation to the practical etiology of infectious diseases is in our knowledge of the sources, modes and channels of infection, both generally and with reference to individual members of the group; of personal predisposing conditions; and of the external circumstances which favor or promote their endemic and epidemic prevalence.

The question of the communicability of certain infectious complaints from person to person through the atmosphere is an extremely important one, especially when a number of individuals are aggregated togther; as well as the distance to which the contagium can be thus conveyed, and the agencies which assist in its dissemination. This question is by no means settled in not a few instances. He referred particularly to typhoid fever and smallpox. While typhus fever has always been regarded as a disease strongly infectious from person to person, typhoid fever has been practically dealt with by the large majority of the profession as being free from danger in this way. Now, however, the tendency undoubtedly is, and probably rightly, to be much more careful as regards enteric from this aspect, and there is a growing objection to the admission of typhoid patients into the ordinary wards of general hospitals. Smallpox is still more important. This complaint is highly infectious through the atmosphere, but how far it can be thus carried, particularly from a smallpox hospital or hospital ship, and the influence of winds in conveying the infective agent, is another matter, and may involve troublesome or even momentous consequences. He had noticed in the medical press recently directly contrary opinions on this question, expressed by those who apparently have had equal experience and opportunities of arriving at a practical conclusion. How far emanations from drains, sewers, defective water-closets, and the like can produce so-called "blood poisoning" and other indefinite infective conditions, is another question which needs clearing up.

Passing to the more practical results of modern investigations as to infection, he called special attention to the following facts:

1. As a starting point infective micro-organisms have been found and demonstrated in the blood; in certain secretions; in the excreta, urine as well as feces; in the cutaneous structures or shed epithelium; possibly in the expired air; and in specific lesions, morbid products, and discharges from the body of various kinds. Hence we can readily understand how and why most of the diseases with which these organisms are associated are likely to be transmitted from individual to individual; how the infected materials may contaminate fomites, and be thus conveyed far and wide; how they retain their activity in a dried state for an indefinite period, thus rendering apartments or other places infectious; and how they may be "airborne," being carried about by atmospheric currents or winds, and afterwards either inhaled or swallowed by persons, it may be, far removed from the original source of infection, remote epidemics being thus not uncommonly originated.

2. The communicability of certain grave diseases by the contamination of drinking water in different ways, but especially by admixture of infected excreta, is an established fact the importance and far-reaching consequences of which it is impossible to estimate or realize in any adequate degree. Why such contamination should take place is often obvious enough, but it is rather startling to be told that unsuspected and most inviting "spring water" may be a highly dangerous source of enteric fever.

3. One of the most striking additions in modern times to our knowledge regarding the conveyance of infection is in relation to food. In this connection milk and its products stand out very prominently, not only on account of their frequent contamination by infectious materials, probably mainly from the deliberate addition of tainted water to milk, but also because this valuable food may convey organisms directly from diseased animals by whom it is secreted.

4. The rôle which different animals play in the transmission of infectious diseases to man is another aspect of the subject on which modern observations and researches have thrown remarkable light. The relationship in this respect of such diseases as hydrophobia and glanders has long been recognized. The idea of direct infection through the milk or flesh of infected animals is of comparatively recent date. The danger of infection being carried directly by domestic animals, such as birds, cats and dogs from person to person, or perhaps because they themselves are suffering from certain diseases, is not yet appreciated as it ought to be. The rôle played by such unwelcome "large vermin" as rats and mice in relation to plague and probably some other complaints is now familiar to all. Flies, cockroaches and the smaller but too well-known personal vermin may no doubt be instrumental in conveying infection in certain cases, and flies may thus taint food. But the most remarkable and important revelations which modern investigators have given us as to the transmission of infection by animals are those relating to mosquitoes. The discovery and demonstration of the connection between these minute torturers of humanity and malaria, in which Sir Patrick Manson and Major Ross have taken such a prominent part, has already worked incalculable good, and promises in the future to revolutionize the conditions of life in many parts of the world, to the inestimable advantage of the communities who are native to the district, as well as of Europeans whom circumstances compel to reside there. The same statement applies to yellow fever, and probably to other affections prevailing in climates and localities where mosquitoes abound.

5. The question of the relation of infection to soil, place, and particular houses or groups of houses, is a very important one, but about which there is at present much that is uncertain and indefinite, and that needs to be worked out more fully before any positive conclusions can be arrived at with regard to individual diseases.

6. Another most important aspect of infection, from a practical point of view, is the fact that we are every one of us always carrying about in various parts of our bodies microbes, which while habitually innocuous and non-virulent, may under favoring conditions, so far as they are concerned, become extremely virulent, or possibly specific, to our personal undoing; or we may even be harboring in our mouths, throats, noses, ears and thereabouts specific germs by which, quite unintentionally, we are liable to infect others at any time, while we ourselves go scot free.

7. Lastly, he referred to the progress made in our knowledge of the channels of entrance of microbes into the system, and the modes in which they are disseminated.

TREATMENT.

There are certain special questions bearing on the treatment of infectious diseases which he could not pass over without brief comment.

1. *Hydrotherapy and Allied Methods.*—Dr. James Currie of Liverpool strongly advocated and carried out the treatment of fevers on a considerable scale by baths and douches. This treatment fell into practical desuetude, and, indeed, was generally looked on with aversion and dread. In modern times, however, it has not only been revived, but numerous other methods for applying cold to the body, either generally or locally, have been added, not only by means of water, but also of ice and cold air. These methods are now generally recognized and extensively adopted, probably more on the Continent and in the United States than in this country, even in the treatment of many of the ordinary fevers, but especially in the more severe cases; and the local application of ice is strongly advocated in acute pneumonia and other inflammatory infective diseases. While of great value as antipyretics they have other important beneficial actions. Regarding hydrotherapy and allied measures in the treatment of infectious diseases, every medical practitioner ought to be familiar with them, and be able and ready to carry them out when required. The milder methods, such as sponging the skin or applying ice locally, are easily practiced and are often of the greatest service.

2. *External and Local Treatment.*—The treatment of external or local manifestations of particular infectious diseases, such as scarlatina, smallpox or diphtheria, affords legitimate ground for differences of opinion, and it is often puzzling to determine what is best to be done for such conditions when one reads the different methods of treatment advocated by different experienced authorities. The measures to be adopted must be determined very much by the particular views of the practitioner, guided by judgment and discretion, and modified by the special circumstances of each case. Antiseptics and disinfectants are employed with great advantage as local applications for various purposes. How far the light treatment, the *x*-rays, or particular color rays are going to help us, can not be definitely determined at the present time. Just now the subject has come very prominently before the profession and the public, and the "red-light treatment of smallpox," which, however, is by no means a novelty, so strongly advocated by Professor Finsen is attracting special attention, as well as some adverse criticism. What we may expect, also, from that wonderful, newly-discovered element, radium, it is impossible to foretell, but we must be on our guard against accepting statements as to its marvelous curative effects by irresponsible observers.

3. *Vaccines: Serumtherapy.*—What would, no doubt, be generally regarded as the most vitally interesting and important question of modern times bearing on the prevention and treatment of the entire group of infective diseases, is that of "serumtherapy," using the term as an inclusive one, which has

come as the natural outcome of the microbic theory, and is founded, on the whole, on reliable bacteriologic researches and experiments, supported by the results of practical experience in living subjects.

Evolution of Abdominal Surgery.

The address in surgery was given by A. W. Mayo Robson, F.R.C.S., Leeds, who detailed his observations on the evolution of abdominal surgery from personal reminiscences extending over a third of a century and the performance of 2,000 operations.

The rise and progress of abdominal surgery has centered more around ovariotomy than any other branch of work, hence he reviewed the evolution of that operation, calling it the battlefield of abdominal work.

Under perfected technic and a judicious combination of asepsis and antisepsis, ovariotomy has become one of the most successful major operations in surgery, and has paved the way for other equally great triumphs within the abdomen.

It has proved a truly beneficent procedure, and has not only saved thousands on thousands of valuable lives, but has restored to their families sound and healthy very many of the wives and mothers and daughters of nations.

The discovery of the frequency of perforative appendicitis, of perforating gastric ulcer, and of other peritoneal catastrophes is gradually abolishing the term acute peritonitis for the more rational one of acute peritoneal infection, for the treatment of which surgery alone is of any use, and even for it to be of service operation must not be long delayed.

These more rational views of pathology and treatment have originated and developed within recent years, and he could recall case after case, during his student days, in which peritoneal catastrophes ended fatally, where now surgeons should, by timely interference, give a fair chance of life. Could anything show this more definitely than the results of treatment of perforated gastric ulcers, which if operated on at once would would have hardly any mortality, if within 12 hours of rupture have a mortality of 16.6 per cent.; if within 24 hours, 63.6 per cent.; if within 36 hours, 87.5 per cent., and if delayed for 48 hours will only rarely succeed; or to give another example, than the results of surgical treatment of the intestine in typhoid fever, alas too seldom resorted to.

In injuries of the abdomen by penetrating wound, whether stab or bullet wounds, the resulting troubles are from infection, either directly through the instrument causing the injury or by perforation of one of the hollow viscera and escape into the peritoneal cavity of the septic contents; how much more rational it is to consider this as an infection and immediately to set about the removal of the poison and the repair of the damage, if it can be done under conditions favorable to success, than to treat it as peritonitis and rely on so-called antiphlogistic remedies. Few greater triumphs of scientific surgery can be shown than some of the remarkable cases of visceral injury, where stomach, bowel, liver, gall bladder, and other viscera have been perforated, either by bullet or some other sharp instrument, and in which operation has been successfully performed, before infection has had time to occur.

Appendicitis of the acute, perforating, or gangrenous type comes on so suddenly as often to constitute a peritoneal catastrophe, and in a proportion of cases terminates fatally in so rapid a manner that the diagnosis is made only with great difficulty, or not at all. Such cases, when he was a student, went undiagnosed, and death was ascribed to peritonitis simply, a sufficient diagnosis in those days; and it was not till 1886 that anything was heard of this lethal malady, which, though it has slain its tens of thousands, is now, thanks mainly to the labors of Fitz of Boston, who laid the foundation of modern knowledge of the subject, brought under subjection in a very large percentage of cases.

The disease is said to be on the increase, but he is not at all clear as to the truth of this, as there have been buried in literary records for generations, fairly accurate accounts of dangerous inflammations occurring in the right iliac fossa and described vaguely as typhlitis, perityphlitis, paratyphlitis, etc., and both Copland and Burne in 1837 gave accurate descriptions of perforative appendicitis and its consequences.

It is certainly more frequently diagnosed and more scientifically treated than it was, and it is a comfort to know that the operation, when undertaken early, is attended with an encouraging amount of success, and, as shown by Sir Frederick Treves, when treated in the quiescent period it is almost devoid of risk. Arguing from his own experience of operations in the quiescent period in a large number of cases without a death, and from that of many other surgeons at home and abroad, he has no hesitation in saying that had he an attack of appendicitis he should prefer accepting the infinitesimal risk of removal of the organ directly the attack was over to the decided risk of waiting for the next seizure, which might be one of the acute type.

SURGERY OF THE LIVER, STOMACH AND INTESTINES.

After discussing hysterectomy, he turned to the liver and stomach.

The surgery of the liver was until recent years limited to the evacuation of abscesses and hydatids, and it is interesting to note the evolution of the various methods following closely one on the other; of emptying by trocar or aspirator; of opening by caustic or thermo-cautery; of incision *à deux temps;* and, lastly, of the method which we now generally adopt—hepatotomy, or direct incision of the organ after reaching the liver, either through the abdominal parietes, or, if necessary, through the thoracic wall—an operation the credit of which must be given to Lawson Tait.

The surgery of the stomach is still more recent than that of the gall bladder, but unlike gall-bladder work, which was successful from the outset, the way to success in gastric operations has been paved with many failures, and only recently has the surgeon been able to show what can be done in this branch of work.

He is firmly convinced that many deaths are ascribed to cancer when the disease is inflammatory and perfectly curable by the operation of gastroenterostomy without removal of the tumor; this he could prove from his own experience in patients now living and well several years after an operation, which at the time was thought would be only of a palliative nature.

Until quite recently gastric ulcer, except for one or two of its complications, has been considered to be a subject for medical treatment from first to last. The profession is, however, becoming awakened to the fact that it is not the trifling ailment it was once considered to be, and that it should from the first be taken seriously, for it is in the early stages that medical treatment can be employed to the best advantage, and in the later stages that general treatment is so often followed by relapse or by serious complications.

The pancreas had practically received no attention from a surgical point of view up to Senn's classical experimental work in 1886, and even for some time after that the only interest centered around cysts, so that Greig Smith, writing in 1896, said, "The experience of the last ten years has added little to the work of Senn of Chicago." But what do we see to-day? That the subject is of such magnitude as to need a volume of considerable size to adequately deal with its pathology and surgical treatment. He himself has operated on nearly a hundred cases of diseases of the pancreas of various kinds.

Acute pancreatitis is one of the most serious and fatal of diseases, often coming on with startling suddenness, and it is astonishing how it can have escaped the notice of pathologists until so recently. Fortunately surgery has been able to interfere beneficially in some of these cases, especially those ending in suppuration, and as our knowledge of the subject increases we shall be able to do more both in the way of prevention and cure.

The surgery of the intestines provides the most varied and difficult field of work in the abdomen, and as the ordinary methods adopted in general surgery here need modification, the evolution of intestinal surgery has been accompanied by infinite variety in detail.

The interrupted suture at first employed occupied so much time in application that many modifications were soon introduced, and in 1885 Mr. Bishop showed there were no fewer than thirty-three distinct methods of enterorrhaphy, and since probably as many more have been introduced.

In 1887, Senn's plates were employed to facilitate the process of intestinal anastomosis, and he remembered what a great impetus was given to the surgery of the intestinal canal by Dr. Senn's very able paper and demonstration at the International Medical Congress in Copenhagen. In 1892, being dissatisfied with the methods then in vogue, he invented a decalcified bone bobbin shaped like a cotton reel, which would form a temporary splint around which to apply two continuous sutures, one to the serous and another to the mucous margin of the new openings; which method has proved most useful, and he feels sure has ministered to whatever success he has had in this line of work.

The continuous sutures applied over the bone bobbin considerably shortened the time of operation and left the union so safe and secure that in a large number of operations since performed on the hollow viscera, he has continued to employ it with great satisfaction. As illustrating its utility, the series of cases of posterior gastro-enterostomy performed by him up to the end of last year were all done by this method; and, in the four cases that died, the union, as proved by necropsy, was perfect; moreover, he knows that the anastomotic opening has not the tendency to contract that occurs after some of the other methods, and as the bobbin dissolves within two or three days no foreign body remains to cause further trouble. In end-to-end junction of the divided bowel in enterectomy the decalcified bobbin has given him equal satisfaction, and, though from the nature of the cases the actual operative mortality has been greater, yet in no case has the result been due to imperfect coaptation.

In 1892 Dr. Murphy of Chicago invented his well-known metal button, which, since it is employed without previous application of sutures, can be used very quickly, and by its distinguished inventor, as well as in the hands of other surgeons it has been adopted with great success. The two chief disadvantages it presents are, first that it is necessarily associated with sloughing of the compressed and coapted ends of the bowel, next that a foreign body is left in the canal, which sometimes produces ulceration and other troubles, and thirdly that the opening has been found in some cases to contract and necessitate a further operation. Along with many other surgeons he gave it a thorough trial, but soon reverted to the method of suture round a bobbin, and the general trend of opinion is now to rely on simple suturing with or without any mechanical support.

For the rational treatment of intestinal obstruction we owe much, first to the anatomic researches of Sir Frederick Treves, and secondly to his admirable work on the pathology and surgery of the subject.

At the present day the differential diagnosis has been so well worked out, and the technic of operative work so much improved, that no physician or surgeon long delays resorting to operation if relief be not soon obtained, and the results as shown by numerous reports, amply justify the change.

PREGNANCY.

Among the great advances of surgery in the period in question has been the successful treatment of many of the anomalies of pregnancy; for instance, the eminently satisfactory results now obtained in that ancient operation, cesarean section, where at one *séance* two, or sometimes three, lives are saved, and which in the hands of Murdoch, Cameron, Leopold, Sanger, and other operators has been done in recent years with an extremely small mortality, whereas in the large maternity hospitals in Paris during half a century before the aseptic era, although the operation had been done sixty times, in no instance had the mother's life been saved, and in England the operation for similar reasons was condemned absolutely. He knows of no operation that has given greater satisfaction than this one, for the patients are eternally grateful, which is truly the highest reward of the surgeon.

THE SURGERY OF THE KIDNEYS AND URETERS.

The most recent advance in renal surgery has been in the treatment of chronic nephritis or Bright's disease, which was first drawn attention to by Mr. Reginald Harrison, who recommended renal puncture or incision in certain cases of chronic albuminuria, but to Dr. Edebohls of New York must be given the credit of adopting an original operation for the treatment of Bright's disease. He in 1898 deliberately exposed both kidneys, stripped their capsule, and fixed them in position, in a young woman of 26. Frequent examinations during the five years showed in every instance normal conditions, and the patient has recently married and is well. In March of this year Dr. Edebohls reported 51 cases of renal decapsulation, and in 47 of these cases both kidneys were operated on at the same time. Out of this large number, 22 are said to be improving from three to fifteen months after operation.

As yet it is too early to pronounce a definite opinion on the procedure, but it is an undoubted fact that decapsulation does effect some improvement in this serious malady, and it may possibly prove effectual in saving life in those terrible cases where suppression of urine comes on after some trifling operation, such as catheterism, or after a chill, or in scarlatina; just as surgery has effectually stepped in and saved life where suppression was due to obstruction of both ureters. No patient ought to be allowed to die from suppression of urine without the surgical question being considered.

Ureterotomy for stricture and valvular obstruction, leading to hydronephrosis, was an innovation first successfully performed by the late Christian Fenger of Chicago in 1892, and since done by others; for instance, in a case of this kind, where the kidney merely formed a shell over an enormously dilated pelvis, he found the ureter strictured and coming off from the upper part of the dilatation. By dividing the stricture, bringing the edges together transversely, and afterward constricting the large sac by a number of running sutures, the kidney was saved, and has since performed its work satisfactorily.

SEROTHERAPY.

It was hoped that the principle of serumtherapy which has been so eminently successful in the case of diphtheria would also be applicable in the case of bacterial diseases. Unfortunately, however, hopes have not been fulfilled, as not only have the sera thought to be applicable to other diseases failed to do good, but in some cases actual harm has resulted. Nevertheless, the principle is capable of being worked out, and doubtless ere long will be, and he feels sure that it is destined to revolutionize practice in dealing with localized bacterial invasions.

An immense impetus has been given to this line of work by the investigations of Dr. Macfadyean, who, utilizing the discovery of the liquefaction of air made by Professor Dewar, and the intensely low temperature that can be obtained through its employment, has succeeded in grinding up typhoid organisms and liberating the bacterial contents, which can be used as protective vaccines without the danger of introducing living organisms that would tend to intensify and continue the disease.

Of the treatment of streptococcus infection, such as erysipelas and other diffuse inflammations, by the antistreptococcus serum surgeons would probably point to some excellent as well as to other uncertain results; but as improvement in the preparation of the antitoxin occurs, and as their knowledge of when and how to use it is increased, they would be able to calculate on more certain results. At the present time surgeons are finding the injection of the serum of service in immunizing before operating in certain regions, such as the tongue, mouth, throat, and rectum, where asepsis can not be secured with certainty.

In conclusion he said he had tried to show what a close connection exists between the science and art of our profession, and how very necessary it is, if we are to continue our march of progress, that experimental research should not only be untrammeled by factious and unreasoning opposition, but that it should receive greater recognition, encouragement, and support at the hands of the public.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Treatment of Cough.

Piromm, in *Med. Bul.*, recommends the following combination in the treatment of cough due to an acute bronchitis:

℞. Codeinæ sulph.	gr. 1/16		004
Antimonii et potass. cit.	gr. 1/24		0025
Pulv. opii et ipecac.	gr. 1/12		005
Ext. gentianæ	gr. i		06

M. Ft. capsula No. i. Sig.: One such capsule to be taken every hour until nausea appears; then one every two hours.

The author states that, with this treatment, the cough begins to lose its harshness and the bronchial secretion is increased within *thirty-six* hours, when the stimulating expectorants should be substituted, such as scilla, ammonium chlorid, ammonium carbonate and terpin hydrate.

In the treatment of chronic bronchitis the derivatives of turpentine are of service. The oils of eucalyptus, santal wood and thyme are also successfully employed in chronic bronchitis. In prolonged and stubborn cases of acute bronchitis the following is valuable in relieving the cough and promoting elimination from the mucous membrane:

℞. Codeinæ sulph.	gr. 1/8		008
Ammon. chloridi	gr. v-x		30-.60
Syr. senegæ	m. xv	1	
Syr. scillæ	m. x-xv		65-1.
Syr. pruni virg. q. s. ad	ʒi	4	

M. Sig.: At one dose, to be repeated every two or three hours.

In chronic bronchitis the following is advised by the author:

℞. Codeinæ sulph.	gr. 1/4		015
Olei eucalypti			
Terebeni, āā	m. iii		20

M. Ft. capsula No. i. Sig.: One such capsule to be taken four times a day.

Dyspnea in Chronic Bronchitis.

According to Bruhl, in the *Med. Gaz. of Nantes*, the following combination is of service in the treatment of chronic bronchitis of elderly individuals:

℞. Essentiæ *anise*	gr. xv	1
Aq. ammoniæ	gr. lxxv	5
Alcoholis (90 per cent.)	ʒvi	25

M Sig.: Five to six drops in water or syrup three times a day.

Antisepsis of the Mouth.

The following combinations are recommended by Miller in the *N. Y. and Phila. Jour.* as antiseptics for the mouth:

℞. Acidi thymici			
Acidi benzoici	gr. iii		20
Essent. menthæ pip.	gr. xlv	3	
Tinct. eucalypti	m. x		65
Alcoholis	ʒivss	18	
	℥iii	90	

M. Sig.: Put a sufficient amount in the glass of water to render the water milky and use as a mouth wash; or:

℞. Acidi tannici		
Menthol	ʒiii	12
Thymol	ʒii	8
Tinct. benzoini	gr. xv	1
Alcoholis	ʒiss	6
	℥iii	90

M. Sig.: Ten drops in half a glass of tepid water.

Ulcer of Stomach.

Gustav Fütterer, in *Northwestern Lancet*, states that round ulcers of the stomach are very difficult to heal as long as anemia is present. Consequently he advises the treatment and correction of the anemia present which may be primary in the form of chlorosis or of a secondary character. He recommends that the juice extracted from four pounds of beef be given daily until the hemoglobin is approximately normal. The patient should be put to bed under the care of a nurse. It is not necessary to resort to rectal feeding when the beef juice is given. As soon as the hemoglobin has reached the proper proportions the beef juice may be omitted and the patient placed on a milk diet and at the end of a month or six weeks the patient may get up and begin taking solid food in small quantities at first. He recommends in some of these cases a solution of silver nitrate, grains five to the ounce, giving a tablespoonful on an empty stomach three times a day.

Variations in the Strength of Digitalis Leaves.

From the observations made by Focke, according to an abstract in *Amer. Med.*, the variations in the strength of digitalis leaves which arise in the drug store are connected regularly with the time of year in which the preparations are sold. The leaves in July and August are, according to Focke, four times as strong as those displaced by them. Until the beginning of October they lose half the strength, until January two-thirds, and until summer three-fourths. He demonstrated the comparative strength of the leaves on animals, observing that poisoning took place more frequently and with smaller doses in the second half of the year. Poisoning occurring in the first half was due to very large doses.

Migraine.

J. R. Clemens, in *Med. News*, highly recommends the use of potassium iodid in the treatment of migraine to the exclusion of all other remedies. He observed that the headache in migraine is very similar to that due to cerebral syphilis, being of a deep-seated, constricted character, with nocturnal exacerbations. He gives it in doses ranging from 5 to 15 grains, three times a day. By this treatment he noticed that the headaches diminished both in frequency and severity.

The following combinations are of value in the treatment of migraine according to Yeo in his *Clin. Ther.*:

℞. Sodii salicylatis	gr. xlv	3
Sacch. lactis	gr. xxx	2

M. Ft. chart, No. vi. Sig.: One powder to be taken every hour at the time of the attack; or:

℞. Caffeinæ citratæ	gr. xv	1	
Quin. bisulph.	gr. xxii	1	50
Sacch. albi	gr. xxx	2	
Olei menth. pip.	gtt. i		06

M. Ft. chart. No. x. Sig.: One powder to be taken three times a day; or:

℞. Antipyrini	ʒiss	6
Pot. bromidi	ʒiv	15
Spts. chloroformi	ʒii	8
Aquæ camphoræ q. s.	viii	240

M. Sig.: One large tablespoonful to be taken when the attack comes on and a dessertspoonful night and morning between the attacks.

As an aperient in migraine the following:

℞. Quininæ sulph.	gr. xv-xxx	1-2
Ext. aloes aqueous	gr. lxxv	5
Pulv. ext. glycyrrhizæ q. s.		

M. Ft. pil. No. lx. Sig.: Two pills to be taken night and morning.

Opium Habit.

In an abstract in the *N. Y. and Phila. Med. Jour.* occurs an outline of treatment of the opium habit, as carried out successfully by Dr. E. I. Osgood in breaking up the opium habit among the Chinese. He gave four pills daily of one of the following combinations originated by Drs. Macklin and Beebe:

℞. Quininæ sulph.		
Ext. cannabis ind.	gr. ss-2/3	03-.04
Ext. nucis vom.	gr. ss	03
Sod. phosphatis	gr. 1/3-ss	02-.03
	gr. 2/3	04

M. Ft. pil. No. i. Sig.: One such pill four times a day; or:

℞. Quininæ sulph.		
Ext. bellad.	gr. ii	12
Ext. nucis vom.	gr. 1/6	01
Ext. cannabis ind.	gr. 1/6	01
	gr. 1/4	015

M. Ft. pil. No. i. Sig.: One such pill four times a day.

Acne and Rosacea.

Dr. T. G. Lusk, in the *Post-Graduate*, states that the first thing to be considered in the treatment of *acne* and rosacea is

2. Altitude and Heart Disease.—Babcock reports some peculiar and rather contradictory cases of effects of altitude on cardiac patients, and he asks if we are to seek the explanation of the ability of one patient and the inability of another to endure altitude in the conditions of the blood pressure, or shall we conclude with Regnard that anyone can reside at an altitude of a mile or so after he has become acclimated. He thinks if Colorado physicians would make it a rule to record the blood pressure in newcomers, especially in those showing signs of cardiac dangers, and compare them with the blood pressure of the same persons after accustomation to the altitude, the results would be of value. Consumptives have generally a low *tension pulse* and yet most of them are able to bear residence in Colorado without serious cardiac embarrassment. He suggests it as his growing belief that if a cardiopath will remain inactive at a high altitude until he is accustomed to the change, he can visit the mountains with impunity. The dangers of travel and residence at high altitudes seem to be greater with the normal individual, who is likely to overdo. The heart becomes more easily overtaxed.

3. Tuberculosis.—Saxe's *article* is concluded in this issue. He discusses the effects of tuberculosis on insanity and quotes from Fanoni as to the criminal tendencies of the consumptives. His summary and conclusions are given as follows:

1. The consumptive exhibits in the average case, traits of mind and of temperament *that have* been made use of by some of the best writers of fiction in describing the characters of tuberculous persons—traits that are well worth studying, inasmuch as they are directly connected with the disease, although not specifically characteristic of tuberculosis.
2. The *psychical and* temperamental traits of the average consumptive have not been studied by medical men with the attention which they deserve.
3. The only probable theory thus far advanced as to the causes of the mental and moral degeneration of the consumptive, leading even to criminal tendencies, is that of toxic poisoning of the central nervous system by *the products* of the tubercle bacillus, resulting in neurasthenia, psychasthenia, hysteria and insanity.
4. The fundamental factors in the psychical make-up of the typical consumptive are the loss of self-control, the rise of brute selfishness, the increase of susceptibility to suggestion, to emotion and to nervous irritation, and the tendency to rapid, nervous and psychical fatigue.
5. There is no tangible proof that the sexual functions are exalted in tuberculosis, but in all probability the sexual irritability is raised in the early stages of the disease and lowered coincidently with the lowering of vitality in the later stages.
6. In all probability there is a connection between tuberculosis and insanity, the tuberculous toxin contributing, with other factors, in persons rendered susceptible by psychical and somatic degeneration, to the derangement of the mind. Any form of insanity may be found in tuberculous persons, and the term "tuberculous insanity" should not be used to designate a type of insanity peculiar to tuberculosis.
7. The criminal tendencies of consumptives have been observed with *sufficient frequency* to justify an investigation into the medicolegal question of restricting the responsibility of a criminal on the ground that he is tuberculous. Mental and physical degeneration, *together* with the tuberculous intoxication already referred to, are the chief factors in the make up of the tuberculous criminal.
8. The euthanasia of consumptives, which has excited speculation, is to be explained on purely physical grounds, the changes in the nervous system being so marked at the time of approaching dissolution as to efface the patient's suffering and render his death easy.

4. Hay Fever.—May has experimented with Dunbar's antitoxin and finds it effective on the spring form of hay fever in this country, as well as in Germany. He thinks that the conclusion of Dunbar that spring hay fever is due to the pollen of grasses is supported, and reports his suggestion that the autumnal cases will possibly find a toxin to which they will also respond.

5. Congenital Hip Dislocation Paralysis.—Taylor has observed several cases of paralysis of the quadriceps following reposition of congenital hip dislocation, an observation which has also been made by Lorenz. This condition is easily overlooked, and he thinks that possibly it is more common than has been estimated. The prognosis is generally good. Certain forms of peroneal and sciatic palsies, however, of which he has observed cases, may cause more or less trouble. He thinks that the manipulation of reposition should be deliberate and careful, and when serious obstacles to reposition exist, manual force alone should be abandoned.

Boston Medical and Surgical Journal.

August 6.

7 *The Sources, Favoring Conditions and Prophylaxis of Malaria in Temperate Climates, with Special Reference to Massachusetts. (Concluded.) Theobald Smith.
8 The Element of Torsion in Lateral Curvature of the Spine; Its Place in the Cause and Treatment. Robert W. Lovett.
9 A Criticism of Klemperer's Work on the Condition of Uric *Acid* in the Urine. Francis H. McCrudden.

7. *Malaria.*—Smith concludes the subject, which was discussed in two previous numbers, with the following summary:

1. There is no evidence that any but the tertian form of malarial fever can be propagated in Massachusetts.
2. The original source of tertian infection must be looked for in the blood of individuals coming from permanently infected localities in our own country and in southern Europe.
3. There is no definite information as to the stage of disease or relative immunity in which *mosquitoes* may become infected, but analogy with similar diseases of animal life indicate that the gametes are not formed early in the disease, and that relatively immune persons are the most dangerous, especially after fresh exposure, because in them gametes *form* very promptly without causing much or any clinical disturbance.
4. The dissemination of *infection* is most easily promoted in our latitude when people live in a *crowded* condition, unprotected from mosquitoes and near breeding places of anopheles.
5. The decline and disappearance of *malaria* after importation and epidemic prevalence is in *part due to* relative isolation of the inhabitants and protection by quinin and from mosquitoes, and in part to the absence of persons partially immunized by long exposure in endemic localities.
6. There is some evidence that sewage pollution in surface waters favors mosquito larvæ directly, through increase in food supply; indirectly, by injuring their enemies.
7. Since malaria may be latent and, hence, unrecognized, and since it is largely a disease of the lower classes, whose movements it is difficult to control, the best *method* of reaching it is to suppress the mosquitoes whenever possible.
8. Malaria is of sufficient importance to become a notifiable disease.
9. Infants and children exposed should have their blood examined during any disturbance of health.
10. In times of epidemic malaria it may become necessary to make special *regulations governing* infected *persons.*
11. It is of great importance that the relation of the widely distributed species, *A. punctipennis,* to the parasite of tertian fever be accurately determined.
12. It is also highly desirable *to* test the infecting power of fresh cases of tertian fever as compared with relapses and with individuals from malarial countries.

Medical News, New York.

August 8.

10 *Acute Non-suppurative Encephalitis; with Report of a Case. Harlow Brooks.
11 *The Form of the Ureter. Byron Robinson.
12 *A Simple and Rapid Chromatin Stain for the *Malarial Parasite.* Francis C. Wood.
13 *The Choice of Technic in Operating on Prostatic Obstruction. Charles H. Chetwood.
14 Resection of the Left Pelvis for Osteosarcoma. M. Stamm.
15 The Palliative Treatment of Fibroid Tumors of the Uterus. Augustin H. Goelet.

10. *Acute Non-Suppurative Encephalitis.*—The case here reported by Brooks was one of a girl 19 years of age, without prior bad habits or bad personal or family history, except excessive tea drinking and possibly drug taking for headaches. The postmortem is detailed. There was reflex cerebrospinal meningitis, probably secondary to cerebritis and of the cellular type, as described by Delafield and Prudden. There was also a general non-septic cerebritis of all parts of the cerebrum, most marked in the cortical and motor region with resulting degeneration of the nerve fibers extending into the spinal cord and through the internal capsule, which have their origin in the involved portions of the cortex. There was also an inflammation of the cerebellar tissues in a less marked degree, and slight, probably secondary degeneration of the ganglion cells of the anterior horns. As to the origin of the disease nothing is explained, but he thinks the cause was not infectious. The best way to explain it, he thinks, is by toxins which may have been of bacterial origin, since such conditions are found to follow influenza, but it may have been due to metabolic origin or to the toxic action of drugs. The patient had been in the habit of taking headache powders, and it is possible that these might have caused the disorder, though he does not know of these symptoms being produced by such drugs. The symptoms are such that the cases are probably sometimes misunderstood or credited to hysteria.

11. The Form of the Ureter.—Robinson illustrates the various types of ureters, showing the swellings and contractions, which he calls pelvic spindles and isthmuses. Of these the right lumbar spindle is generally larger in women than in men.

12. Malaria.—Wood has found the method described below especially valuable in the staining of fresh specimens for the malaria organism:

Fix the preparation for one minute in strong methyl alcohol, wash off in water and stain the slide for a few seconds with a 0.1 per cent. aqueous solution of yellowish eosin. The surplus of the eosin solution should be poured off and a few drops of a 0.2 per cent. solution of methylene azure poured over the slide. The staining will be complete in from one-half to one minute and the slide may be washed with distilled or tap water and dried with blotting paper. . . .

A longer treatment with the azure solution produces a deeper chromatin stain, a shorter treatment produces a stain of less intensity. If a stain of any particular depth is required the whole process may be easily observed under the microscope, selecting a group of leucocytes as a guide. The stain will be seen to gradually color the nuclei of the polynuclears a deep red, and at the proper point the neutrophile granules will be easily visible with a good four mm. dry lens. At the same time the nuclei of the large and small lymphocytes assume a deep red color and the cell bodies of the large forms color a pale blue, while the bodies of the small cells will be a deep blue. At this stage of the process the malarial parasite is of a pale blue color, with deeply red chromatin granules. If the methylene azure has remained in contact with the smear but a short time the red cells will be of a bright pink color, but if the staining is prolonged the red cells become bluish or greenish in color. After prolonged staining with the azure the color of the neutrophile granules generally fades and the bright pink of the eosinophiles is replaced by a bluish tint. For general purposes, *therefore, it is best not to stain the slide too long* with the methylene azure. . . .

Beginners may mistake the blood plates, which often lie in depressions in the red cells, for malarial parasites, especially as they stain red with the chromatin dyes. The distinction must be made by the differences in morphology. The blood plate is not sharply outlined and the nuclear substance is in the form of an indistinct mass not surrounded by a clear zone, while the small ring-form of the malarial parasite is very sharp in its outline, as is also the chromatic substance, the latter being surrounded by a clear zone and beyond this by the blue ring of the body of the parasite.

He has also been able to make good stains on old slides with this eosin and methylene-blue mixture.

13. **Prostatic Obstruction.**—Chetwood, from his experience in 45 cases, concludes that prostatotomy is less dangerous than prostatectomy. It is the operation of choice in a large number of cases of obstruction, notably those of moderate glandular enlargement or orificial hypertrophy and contracture in which the prime object is removal of the obstruction and depression of the bladder orifice. He also finds that galvano-caustic incisions when combined with perineal cystotomy accomplish satisfactorily the desired result, shorten the operation and minimize the dangers.

American Medicine, Philadelphia.

August 8.

16 *Acute Articular Rheumatism. Thomas McCrae.
17 *Beri-beri or a Disease Closely Resembling It Met in Chinese Fishermen Returning to San Francisco from Alaska. Donald H. Currie.
18 Emotions as Symptoms. Henry S. Upson.
19 Osteitis Deformans; Report of a Case. H. J. Sommer, Jr.
20 An Interesting Case of Pigmentary Degeneration of the Retina (Retinitis Pigmentosa). Walter L. Pyle.
21 The Education of the Young in Sexual Matters: A Lesson in Defeating Quackery. A. Robin.
22 The Ill Health of Jane Welsh Carlyle. George M. Gould.

16. **Acute Rheumatism.**—McCrae reports and analyzes the experience at the Johns Hopkins Hospital during the past year, covering some thirty-seven cases in forty admissions. The chief points noted are the severer type of the disease observed over that of previous experience, the greater proportion of cardiac complications, the long duration of the disease and the mortality. The cultures that were taken were practically negative throughout; the series, therefore, throw no light on the bacterial cause of the disorder. Of the 37 cases, 4 died in the hospital, or 11 per cent., against three deaths out of a total of 270 cases previously treated. The author remarks that the experience of these cases shows that acute rheumatism can kill as well as cripple, and he questions whether the former would not sometimes be the more merciful.

17. **Beri-Beri.**—Currie reports nine cases of what appeared to be beri-beri occurring in Chinamen employed in the Alaskan canning establishments. Four of the nine cases died. He thinks probably 4 per cent. of the Chinamen thus employed were attacked. The vessels which carried them back and forth did no other trading, and, therefore, did not enter into any known beri-beri zone. The cases, therefore, seem indigenous.

Medical Record, New York.

August 8.

23 *Some Comparative Examinations of Breast Milk and Cow's Milk and the Effect of the Addition of Alkalies and Other Antacids to Cow's Milk. Charles Gilmore Kerley, Albert H. Gieschen and George T. Myers.
24 *The Influence of Heredity on the Eye. John E. Weeks.
25 *Treatment of Trachoma. J. Herbert Claiborne.
26 *Electricity in the Treatment of Diseases of the Stomach. E. G. Marshall.
27 *A Contribution to the Study of the Intercostal Phonation Phenomenon and the Litten Diaphragm Phenomenon. Albert Abrams.
28 *Some Dangers of the Hot-Water Bottle as Applied to the Newborn. Douglas H. Stewart.
29 *Artificial Fluorescence of Living Human Tissue. William James Morton.

23. **Milk Examinations.**—Kerley, Gieschen and Myers conclude their article with the following conclusions:

1. Breast milk and cow's milk are both acid.
2. The litmus paper test for milk is unreliable because of the variation in the quality of litmus paper, and the litmus taking part in the reaction and not acting as an indicator.
3. The effect of adding lime water or bicarbonate of sodium to feedings is to retard or inhibit the formation of curds by rennet.
4. The teaching that lime water, bicarbonate of sodium, or carbonate of potassium should be added to fresh milk or feedings simply because they are antacids is erroneous.
5. The addition to milk or feedings of alkalies or salts that become alkaline in solution is an empirical method of aiding digestion by preventing the formation of dense curds that would slowly leave the stomach and be difficult of digestion in the intestine.

24. **Heredity in Eye Diseases.**—Weeks notices the various forms of eye trouble which may be influenced by heredity, including congenital conditions, such as polycoria, epicanthus, coloboma of the iris, aniridia, coloboma of the choroid, albinism, malformation of the globe, cataract, optic nerve atrophy, retinitis pigmentosa, glaucoma, color blindness, etc. He remarks that the most common causes of eye disease are heredity and syphilis, and enumerates a number of conditions of this latter type.

25. **Trachoma.**—The treatment of trachoma is summed up by Claiborne as medicinal or surgical or a combination of the two. In the non-inflammatory forms characterized by frog-spawn granulations, the operation is expression alone with appropriate after-treatment as indicated. The best instrument, in his opinion, is the Knapp roller forceps or some modification. In the inflammatory form the operation of expression followed by a mild astringent and finally by a copper stick, is indicated as long as granules exist in a reasonable quantity. When the disease has passed the granular and is in the cicatricial stage, copper sulphate alone or in combination is indicated.

26. **Intragastric Electrization.**—Marshall describes his experience with the Einhorn method of intragastric electrization, which he says should not be resorted to except where medicinal and dietetic treatment has failed, but in such cases it will be found of inestimable value.

27. **Intercostal Phonation Phenomenon and the Litten Shadow.**—These phenomena are described by Abrams. The first consists of a distinct elevation of the intracostal space when short words or syllables are uttered by the patient. It is best seen, naturally, in lean individuals, and is best elicited if during phonation the patient closes his nostrils and places the other hand over his mouth so as to partially obstruct the exit of air. Its value is in differentiating lung infiltrations from accumulations in the pleural cavity, but it is not infallible here, as it can not be used in obese patients, when the exudate is compressing the lung, or when pleural thickening and adhesions exist. The Litten shadow is the method of discovering the diaphragm movements. The patient is placed with head and shoulders toward the light, lying on his back, with feet directed toward a window and chest exposed. Cross lights should be eliminated. It can also be shown with a strong light held at the foot of the bed, excluding other lights. The observer stands at the side a few feet from the patient, with his back to the light and observes the lower chest at an angle of 45 degrees. The patient is directed to take deep breaths, and as the ribs rise with each inspiration a short, narrow shadow moves along the axilla from about the seventh to the tenth rib. This is less evident during expiration, and cuts the ribs at an oblique angle. It is best seen in lean individuals of both sexes and is never absent in health, excepting in very fat individuals or those who can not take deep breaths. It permits us to say that in that particular chest region the

diaphragm and lung lie in contact with the thoracic wall and both are freely movable. Its absence would suggest an opposite condition of things, adhesions, emphysema and whatever would displace or make irregular the shadow. He gives a synoptic table of the phrenic shadows in the various conditions where it is diminished, absent or increased. He has tried to exaggerate it by various means and finds if the skin is colored yellow over the area it is much intensified. If nothing else is at hand the use of yellow vaselin will suffice.

28. **Hot-Water Applications to the New-Born.**—Stewart calls attention to the dangers of burning feeble children with hot-water bags, and this accident is not as uncommon as it ought to be. It may frequently be overlooked by the physician, especially if located on the back. He says if the reader will examine every new-born child on the third, sixth and seventh day after birth he will become just as timid as is the writer, and as watchful to see that there is a thick folded blanket above every hot-water bag and a thick folded towel under every ice bag.

29. **Human Tissue Fluorescence.**—Morton finds that administering quinin renders the tissues fluorescent and suggests that it might possibly be of value in cancer cases. Acting on this idea he has, during the last year, been in the habit of administering from 5 to 10 gr. or more of quinin bisulphate about one hour before *x*-ray treatment. While he can not positively affirm it, he believes that the cases thus treated by the combination of fluorescing medicines and the *x*-ray have made more improvement and more certain recoveries than patients not thus treated. He thinks this method, which he calls the *x*-ray histofluorescence, is worthy of trial. He has also used it in some other forms of disease, such as chronic malaria, Hodgkin's disease, lupus, tuberculosis and tuberculous deposits. He has shown the existence of this fluorescence by photographs of portions of the human body treated with quinin either applied locally or hypodermically in a dark room by its own light.

Cincinnati Lancet-Clinic.

August 1.

30 Medical Organization. Brooks F. Beebe.
31 The Use [illegible] Oxygen Gas. *Brose S. Horne.*
32 Surgery [illegible] Diaphragm, Spleen and Thyroi[illegible] [illegible]rrill Ricketts.

August 8.

33 The Chemical Analysis of the Gastric Secretions. Clement C. Fihe.
34 Cancer of the Rectum; Report of a Case. George J. Monroe.
35 Surgery of the Prostate, Pancreas, Diaphragm, Spleen and Thyroid. (Continued.) B. Merrill Ricketts.

St. Louis Medical Review.

August 1.

36 Privileged Communications Between Physician and Patient. L. O. Hocker.

August 8.

37 Pelvimetry by Means of Graphic Reproduction of the Pelvic Canal in the Living Woman. *Hugo Ehrenfest.*

Brooklyn Medical Journal.

July.

38 *Gastric Hemorrhage.* Jacob Fuhs.
39 *Hematemesis Following Appendicectomy, with the Report of a Case and Presentation of Specimen and Slides. George R. Fowler.
40 *[illegible] Clinically Considered, with a Plan for Its Radical Treatment. Walter B. Chase.
41 *[illegible] Wound Infection. George R. Fowler.
42 [illegible] Everyday Ear Cases. J. E. Sheppard.
43 [illegible] William C. Braislin.

39. **Hematemesis Following Appendicectomy.**—Fowler reports a case of fatal hematemesis in an otherwise apparently healthy individual after appendicectomy. Minute ulcerations were found in the stomach, mainly on the lesser curvature. The processes were apparently quite recent, as shown by microscopic examinations, and he thinks that the multiple foci had their origin without doubt in the gangrenous appendix. The toxicity of the appendiceal lesion is responsible for the fatal issue in such cases. The question is whether the emboli bearing staphylococci pass through the pulmonary circulation, and finally find lodgment in the vessels of the gastric mucosa or whether the staphylococci alone were transported to and produced thrombi with subsequent embolism in the vessels. The latter view is sustained by two facts: In one section there was a focus of necrotic tissue containing staphylococci, and the vessels of the submucosa near this area contain recent thrombi, and in another section an exquisite embolus was seen involving a vessel in the mucosa near its bifurcation, the vessel and its two branches containing recent blood clot.

40. **Tubal Pregnancy.**—Chase emphasizes the importance of the practitioner examining a woman liable to pregnancy, bearing in mind the possibility of this condition. In case it occurs and rupture has not taken place the sooner the pregnant tube can be recognized and removed the better. In the cases in which the condition points to recent rupture of the intraperitoneal variety and evidences of hemorrhage are present, immediate operation should be done. It is criminal to leave a woman to chance in such cases. If evidence is present that the rupture is extraperitoneal—into the broad ligament—and the resulting hematoma is moderate in size, waiting for developments may be justified, as nature may possibly take care of the mass. Finally, while it will continue to happen that ectopic pregnancy will show a frightful mortality where no accurate diagnosis has not been made until too late, it is true that with a proper appreciation of the grounds, on which at least a presumptive diagnosis can be made by the practitioner, an increasing number of lives can be saved.

41. **Skin Infection.**—Fowler insists on the importance of skin infection, and gives his own methods. He trims his finger nails as closely as possible consistent with their aid in the tactile sense, and then washes with tincture of green soap and warm water. The spaces between the nails are then scraped with a blunt instrument to loosen the dirt beneath the nails, which has been previously softened by the washing, following this with a special nail brush, consisting of small wire brush stretched in a frame, such as are sold in lengths as smoking pipe cleaners. Then follows the ordinary hand brush properly sterilized, scrubbing the palms, ends of the fingers, including the entire nail. The backs of hands, where eczematous conditions are apt to arise, and the arms as well are cleansed with a folded square of gauze used as a wash cloth. Lukewarm running water is used. All traces of soap are now washed off with a lukewarn 1 to 2,000 mercuric chlorid solution, after which an alcoholic solution of the same strength is used. With the aid of gauze the alcohol is rubbed in and about the matrix of each nail separately. If the hands have been recently exposed to any special infection, such as a pus case, additional precautions must be taken. They should be thoroughly and deeply stained with permanganate and corrosive sublimate solution. A two minutes' immersion is sufficient to stain the hands deeply, after which he decolorizes in a hot saturated solution of oxalic acid. The addition of half an ounce of strong ammonia water to a quart of sterile water makes a solution which will neutralize the acid, after which the ammonia solution is washed off in the bichlorid solution. The hands are again stained in potassium permanganate and mercuric chlorid solution and this stain permitted to remain. During the operation it is of utmost importance, he says, to dip the hands at least every five minutes in cold solution of sublimate. In septic cases bleaching in oxalic acid before the operation is omitted, the hands being simply protected by deeply staining them with permanganate and sublimate solution and permitting this to remain during the operation. This course is also followed in clean cases when the hands have not been recently exposed to a special infection. The stain serves the purpose of preventing the passage of micro-organisms from the depths of the skin of the hands to the surface. The principal points are summarized as follows: 1. The necessity of cleansing the surface and all accessible harboring places for dirt. 2. The necessity for avoiding irritations to the skin of every description and removing those influences which relax its structure and favor the migration of micro-organisms. 3. The protection of the hands from micro-organisms which give rise to suppuration. 4. Frequent disinfection of the surface of the hands during operation. Fowler has little faith in rubber gloves or impermeable applications to the hands.

American Journal of Obstetrics, New York.

July.

44 *Diagnosis and Treatment of Medium Degrees of Pelvic Deformity. J. M. Munro Kerr.
45 *Accouchement Forcé. Robert L Dickinson.
46 *Abdominal and Vaginal Cesarean Section as Means of Accomplishing Accouchement Forcé. J. Clarence Webster.
47 *Cervical Incisions in Labor. Rudolph W. Holmes.
48 *The Bossi Dilator; Its Place in Accouchement Forcé. J. B. De Lee.
49 *The Effects of the Toxemia of Pregnancy on the Cardio vascular System. Richard C. Norris.
50 A Report of the Major Operations Performed on the Service of Dr. H. D Nichol, at the Woman's Hospital in the State of New York, from February, 1901, to June, 1902, with Remarks on the Technic Employed. Dougal Bissell.
51 Report of a Case of Tubercular Pyelonephritis, Ureteritis and Cystitis. Weight of Kidney After Removal 18½ Ounces. W. L. Burrage.
52 *Objections to the Vaginal Route in the Treatment of Ectopic Gestation. J. Wesley Bovée.
53 *Concerning the Nature of the Small Cysts Frequently Found in the Peritoneum Covering the Fallopian Tubes. Thomas G. Dickson.
54 Report of a Case of Cyst of the Round Ligament. A. Brothers.
55 *Placenta Previa. John F. Moran.
56 A Plea for the Better Care of Women After Labor. William M Sprigge.

44. **Pelvic Deformity.**—Kerr reviews the methods of examining for pelvic deformity, giving his own. In certain cases where the difference in size between the head and pelvis is only slight, a decision should be come to only after watching the progress of the labor, especially in primiparæ. What he calls medium degrees of pelvic deformity are "those cases where the C. V. is round about three inches and there are several alternative treatments, forceps, version, induction of premature labor, symphysiotomy and occasionally cesarean section or craniotomy." The factors that should guide us in the decision are: The stage in which the case is seen, whether during pregnancy or after the commencement of labor, the general condition of the mother, the presence or absence of complications, nature of the presentation, and the possibility of rectifying it if abnormal, the condition of the fetal head, the presence or absence of any complications such as malformations, prolapse of the cord or a plural pregnancy. He has never seen a spontaneous birth occur with a C. V. below 3½ inches. Symphysiotomy should be employed only in judiciously chosen cases, though justifiable in such, and is contraindicated in overlapping of the head at the symphysis more than of the slightest degree. With a vera below 3 inches it becomes a last resort, and 2¾ inches is the lowest limit. With 3 inches, however, a good result can be obtained unless the head is too large. With 3¼ inches he would always try forceps first. He thinks the operation should not be performed in persistent breech presentation, and if the fetal heart beat is unsatisfactory. The induction of premature labor would be an ideal operation if the patient were seen early enough in pregnancy, which is not always possible. If we can be sure of the age, it is undesirable to induce before the thirty-fourth week. Craniotomy is justifiable if the child is dead or the fetal heart is feeble and if the patient has been in labor long before coming under care, and there is a probability of her being already infected; even if the child is alive, he thinks craniotomy is the only alternative if one fails to deliver with forceps. It is absurd to say that it is a crime to perforate a living child. It is occasionally quite sound treatment.

45 **Accouchement Force.**—While every case should be studied by itself, the choice of a method where delivery has to be forced is, according to Dickinson, as follows:

For induction in the latter months and for inertia during labor (other causes being eliminated, such as exhaustion, over-distension and malposition of passage or passenger), the bag comes first, then the hand, and the forceps finish their work. For placenta previa, the balloon for the narrow cervix that bleeds when the head will not plug it and, in bad cases, version, since the thigh is the surest tampon. For brisk hemorrhage of detachment of a normally located placenta, the greatest speed, manual or metal dilatation. For the hard cervix of the early months and the unyielding girdle of the primipara or the gristly hardness of eclampsia, the powerful Bossi instrument is a great boon, and none of its imitators approach it.

He asks for a careful study of the various methods lest the European enthusiasm for the branched dilator go beyond bounds.

46. **Cesarean Section.**—The indications for cesarean section are noticed by Webster, and the technic described. It is advisable in some rare cases of eclampsia or when the eclamptic dies, the fetus being still alive, but its routine practice is unjustifiable. Vaginal cesarean section is to be recommended in cases of eclampsia in pregnancy or in early labor in which the cervix is rigid and difficult to dilate. It is in such conditions a safer and more scientific procedure than Dührssen's incisions or forcible stretching with metal dilators, as it produces a clean incision in the mesial plane of the cervix and lower uterine segment, hemorrhage from which may be readily controlled. In placenta previa abdominal cesarean section was first advised by Lawson Tait, but Webster considers it rarely indicated, and only when some condition exists rendering the ordinary methods hazardous or impossible. In accidental hemorrhage or placental detachment it has been rarely employed and should be considered only when impossible to carry out the other procedures by the vaginal route. Vaginal cesarean section is indicated in cases of accidental hemorrhage with a critical condition of the patient, and it is impossible to rapidly dilate the cervix by the ordinary means, provided a competent operator is at hand. Also in affections of the heart, lungs, kidneys, etc., where the mother is in danger, and rapid delivery is indicated, the vaginal method is preferable. Abdominal operation should not be employed except where the other is impossible. In case of the mother *in articulo mortis* carrying a viable fetus, or after the death of the mother, it should be the duty of the physician to advise immediate cesarean section in the hope of saving the child The abdominal operation is the easiest and quickest in such cases.

47. **Cervical Incisions in Labor.**—The following are the conclusions of Holmes' article in regard to Dührssen's operation:

1. The contributions of Dührssen to the subject of cervical incisions are not sufficiently original to warrant a proprietary right in the nomenclature: Coutouly, Baudelocque, Bedford, Braun and Skutsch did much to develop our knowledge of the subject. 2 Effacement of the cervix is an indispensable prerequisite to the use of incisions. For this reason incisions are especially applicable to primiparæ and often are contraindicated in multiparæ. 3. Incisions are indisputably of value, even necessary in essential indications. In contributory indications their use is a moot question; the judgment of the operator must decide in individual cases. 4. Manual dilatation preliminary to incisions does not secure the best cervical condition for incisions. 5. Incisions always are potentially dangerous; dangers comprise infection, hemorrhage and extensive lacerations beyond the vaginal vault. 6. Use of incisions demands an obstetric armamentarium, assistants and a definite experience in obstetric procedures. 7. The details of the technic may be modified to suit the taste of the operator. 8. The minimum number of incisions to meet the exigencies of the case should be made. 9. Oblique incisions may be proven to be more advantageous as regards the after effects than the usual quadrant cuts. 10. In the absence of hemorrhage or accessory lacerations, it is a moot question whether the incisions should be sewed up or not. 11. Immediate delivery should follow the incisions.

48. **Bossi Dilators.**—De Lee's opinion, based on three cases and the study of many reported cases, is that there is a small field of usefulness for the Bossi dilator where rapid dilatation of the cervix is necessary after effacement. Before effacement, the colpeurynter should be used. It will be more successful in multiparæ. The dilator will also be useful in dilating the cervix where manual dilatation would be successful. It is more aseptic and the operation is not tiring. The instrument is not safe, but requires careful and skilled watchfulness, and one must search for and be ready to repair more or less extensive lacerations. These are greater in primiparæ. It should never be used in placenta previa. It does not replace the colpeurynter, the use of the hand or cervix incisions in all cases.

49. **Toxemia of Pregnancy.**—Norris thinks that some cases of sudden death after labor can be explained by an unrecognized toxemia originating during pregnancy and suddenly declaring itself by what he has termed a cardiac eclampsia, overwhelming the heart.

52. **Ectopic Gestation.**—Bovée has changed his opinion as to the availability of the vaginal route in operations for tubal pregnancy. His reasons for preferring the abdominal route are given as follows:

1. The field of hemorrhage can be more quickly reached by this route, taking into consideration the relative amount of time consumed in cleansing the two routes under anesthesia. 2. The condition can be the more readily treated and the ligation of blood vessels more readily and certainly performed. 3. The danger from

secondary hemorrhage in ectopic pregnancy is markedly less when ligation is practiced than when removal of blood clots alone is practiced. 4. Any other important pathologic lesion requiring attention in suitable cases may be treated at the same sitting. 5. The shock, as a rule, will be less than if the vaginal incision and abdominal incision are both made. 6. The tube can be more readily removed than by the vaginal route. 7. The abdominal route is applicable in all stages of the pregnancy, while the vaginal can not be employed for the later stages. 8. The vaginal incision has no place in the treatment of unruptured tubal pregnancy, while the abdominal incision is the route *par excellence.*

53. **Cysts of the Peritoneum.**—The explanation of the cysts here given by Dickson is that they are dilated lymph spaces, and are associated with those diseases of the tube and generative organs which are capable of interfering with the free circulation of lymph in the tubal peritoneum.

55. **Placenta Previa.**—After a rapid review of the literature Moran reports briefly five cases of his own observation. He thinks no fixed routine of treatment can be adopted in these cases. There is rarely any difficulty in lateral previa. In the marginal, however, it becomes more dangerous and the central variety is always a matter of grave concern. Hemorrhage and sepsis are the greatest dangers, and rupture of the uterus as a third factor may be added in accouchement forcé, especially when an attempt is made to deliver the child with an insufficiently dilated cervix. Thorough asepsis, rupture of the membrane, partial detachment of the placenta, efficient tampon, dilatation of the cervix with Barnes' or McLean's bag and application of forceps should give good results in the majority of marginal cases. Where version is indicated and there is a possible choice between bi-polar and internal version, the former will be the safer procedure for the general practitioner. As regards cesarean section, he thinks further experience will have to determine the indications, but the statistics are not very encouraging.

Cleveland Medical Journal.

July.

57 *Rheumatism in Childhood. Alfred Friedlander.
58 The Laboratory Methods in Ohio's State Hospitals. A. P. Ohlmacher.
59 The Relative Value of Diagnosis. F. C. Gray.
60 *The Treatment of Puerperal Eclampsia, with a Report of Cases. F. S. Clark.

57. **Rheumatism in Children.**—Friedlander notices the characteristics of rheumatism as it occurs in children. He considers that infection is generally through the tonsils. Its clinical manifestations are very different from those in adult life; the arthritic symptoms are not so well marked. Rheumatic purpura is quite common in childhood, and rheumatic nodules occur more often in the rheumatism of children. Another symptom, often of diagnostic import, is recurrent epistaxis for which no cause can be found. While diagnosis in the adult is easy, in children, owing to its atypical course, the symptoms not following in the regular way, and many of the usually prominent ones being absent at times, it may be difficult. The onset of an endocarditis which may be an initial phase of the disease is often very insidious; the continuous fever with slight remissions, though of considerably low degree, not explainable by other definite infection, is one of the most valuable signs of beginning endocarditis we have. We do not have the successive involvement of many joints as in adults. In doubtful cases special attention should be paid to the family history, to the previous history of the patient as regards slight joint stiffness, swelling, so-called growing pains, nose bleed, frequent attacks of tonsillitis, and erythema, and the examination of the heart for signs of endo- or pericarditis and temperature. Rheumatic children do best on a generous dietary with special limitations applied to sugar and starchy foods. Malnutrition is frequently a factor in the cases and milk should be taken in large quantities, plenty of green vegetables and moderate amounts of the more easily assimilated meats. They should wear flannel the year round and avoid exposure to the cold east winds when it is slushy under foot. For actual attacks, the salicylates in combination with bicarbonate of soda are the best treatment. To get good effects the amounts must be rather large. Local applications to the joints are not always necessary. A tendency to frequent recurrence heightens the danger of heart involvement.

60. **Puerperal Eclampsia.**—The treatment of puerperal eclampsia, according to Clark, consists first in the removal of toxins. Failure of the kidneys is our best guide. Mild alkaline waters are our best diuretics. The bowels should be moved freely; phosphate of soda in small doses is an excellent laxative. High injections of saline act by flushing out the bowels. Where the convulsions can not be controlled without terminating labor, the uterus should be emptied. He can not recommend cesarean section. Veratrum viride he finds to be often useful, and calomel in fairly large doses by the mouth and still larger ones by the rectum, is good for controlling convulsions. Chloroform is of value to hold the convulsions in check until other remedies can take effect, but for this purpose it should be used continuously and not intermittently. He reports three cases and insists on the importance of prophylaxis.

Archives of Pediatrics, New York.

July.

61 *A Report of Eight Cases of Pneumonia in Infancy Treated with Antipneumococcic Serum. John Lovett Morse.
62 *Principles of Infant Feeding as Based on the Evolution of Mammals. Henry D. Chapin.
63 *Acetone and Diacetic Acid as a Cause of Persistent Recurrent Vomiting of Children. Edward L. Pierson.
64 A Severe Case of Chorea Complicated by Pneumonia. C. F. Judson.
65 Pharyngeal Croup Relieved by Nasal Intubation (Soft Rubber Tubes). W. P. Northrup.
66 O'Dwyer Intubation Instruments. Added Small Tubes for Infants Under One Year. Exhibition of Modern Complete Set. W. P. Northrup.

61. **Antipneumococcic Serum in Pneumonia.**—In the eight cases here reported by Morse the effect of the antipneumococcic serum was apparently negative. It seemed to have no effect on the course of the disease or its symptoms.

62. **Infant Feeding.**—Chapin studies the evolution of infant feeding based on the evolution of the species, and discusses the various forms of mammalian life and the developmental life of the fetus. He offers the following, which he thinks are of value:

1. An infant undergoes three stages of development and nutrition: Pre-placental, placental and mammary; and should be looked on as attached to the mother in all three. 2. At the beginning of the mammary stage, an infant has only the rudiment of a true stomach. 3. During the period of mammary development the mother first changes the character of the infant's nourishment from colostrum to milk, and then the infant's digestive secretions so change the character of the milk that, as the digestive juices increase in quantity and strength, the work of digestion is not thereby lessened but, rather, increased, as the stronger the gastric juices become, the tougher the milk curds become, owing to the acid combining with the curds. 4. The milks of all animals will produce good tissue. They differ in composition according to the rate of growth of the young animals. Their proteids differ in accordance with the type of digestive tract they are to develop. 5. No known method of procedure will convert cow's milk into human milk. All methods of artificial feeding must have in view the production of food that will adapt itself to the developing digestive tract. All substances, aside from breast milk, are foreign to the infant's digestive tract, and may at times cause disturbance. 6. In artificial infant feeding, certain minimum quantities of digestible proteid, fat, carbohydrates and mineral matters are needed. The mean composition of breast milk will serve as a general guide to the nutritive requirements of infants. 7. Milk must be the basis of an infant's food, not alone because it contains animal proteid, but because it contains the only available form of proteid that possesses the function of developing the digestive tract. 8. The proteid of cow's milk, which was intended to develop a calf's stomach to digest grass, must be modified or adapted to the infant's stomach. 9. This may be done by chemically or mechanically altering the character of the curds, by diluting milk with either alkalies or gruels. 10. When, for any reason, a sufficient quantity of proteid of cow's milk can not be given, it must be supplemented by other forms of nucleoalbumins until the normal quantity can be digested. It is a gross error to feed too low proteids of milk simply to overcome indigestion.

63. **Recurrent Vomiting of Children.**—In the three cases studied by Pierson of psychic or recurrent vomiting of children, he carefully examined the urine and found diacetic acid present either just preceding or in the early stages of the attack. The treatment used was bicarbonate of soda, given rectally, in quantities up to 100 or 125 grains a day. He thinks there is no question but that the attacks are prevented by this treatment, and that acetone and diacetic acid are present in the urine before or in the very early stages of an attack.

American Journal of the Medical Sciences, Philadelphia.

July.

67 A Case of Gunshot Wound of the Brain in which the Roentgen Rays Showed the Presence of Eight Fragments of the Bullet; Localization by Sweet's Method Made Operation Inadvisable. W. W. Keen and William M. Sweet.

68 A Report of Two Cases of Multiple Sarcomatosis of the Central Nervous System and of One Case of Intramedullary Primary Sarcoma of the Spinal Cord William G. Spiller and William P. Hendrickson
70 *Histologic Character and Diagnosis of Malignant Neoplasms of the Digestive Organs and Peritoneum John C Hemmeter.
71 Syphilis of the Trachea and Bronchi. Lewis A. Conner.
72 The Prominence of the Eyeball and a Method for Measuring It Edward Jackson
73 *Localization of Foreign Bodies in the Eye and Their Removal, with Report of Cases. Louis C. Deane.
74 *The Lymphatic System and the Tonsils Henry L Swain
75 *The Indications for Operative Intervention in Middle ear Suppuration Barton H. Potts
76 *A Xiphosternal Crunching Sound Myer Solis Cohen.
77 The Cellular Changes in Tuberculous Leptomeningitis I. B. Diamond
78 A Case of Paralysis of the Sixth and Seventh Cranial Nerves of the Right Side with Hemiplegia of the Opposite Side E Andrade
79 Hiccough: Report of a Case L W. Atlee
80 Clinical Gonorrhea without the Gonococcus A L Benedict.

70 **Neoplasms of the Digestive Organs.**—The subject is discussed at length with reference to the leading articles in the literature The diagnosis is specially noticed, and its difficulties, which are marked in cases where there are no metastases or other palpable evidences of malignancy. In the conclusion of his article Hemmeter treats of the transformation of gastric ulcer into malignant disease. The practical deductions of the histologic diagnosis which can be made from the studies of Hauser, Futterer and himself, are that it is possible to diagnose carcinoma or ulcer of the stomach histologically by the characteristic behavior of the true muscularis and the muscularis mucosæ and by the fish-hook form of the fissure presented in the outline of the section through the edge of the ulcer nearest the pylorus. By these features he thinks we are justified in concluding that any gastric adenocarcinoma presenting them has been developed on a pre existing gastric ulcer.

73 **Foreign Bodies in the Eye.**—Deane describes a method of locating foreign bodies in the eye and reports cases According to his experience a scleral incision has been in many cases more satisfactory than trying to extract the substance anteriorly with a giant magnet.

74 **The Lymphatic System and the Tonsils**—The importance of the tonsils as introducers of infection is discussed by Swain, who reports a case at some length. He thinks the pharyngeal tonsil is the one most frequently attacked in children, and its inflammations are the most likely to endanger the general system. He does not advocate the indiscriminate removal of tonsils. The practical point is, he thinks, when we operate to be thorough in what we do and always remember that we have still some tonsillar tissue left The patient has still all the chances of being infected. We have not given an immunity because we have operated, we have only given a lessened liability, and should not dismiss the case as needing no further care.

75. **Middle Ear Suppuration**—Cases are reported by Potts showing the points of diagnosis. He reviews the symptoms indicating operation in many of the cases, which are given by him in substance as follows:

1 Profuse and long continued discharge indicating a possible anterior or mastoid involvement and fluctuating swelling over the mastoid diagnostic when present, but its absence not contraindicating operation Edema behind the auricle is more apt to be due to furuncle, and tenderness over the mastoid, especially in the region of the antrum, is of great significance whenever present, but may be doubtful or absent if the outer table is much sclerosed The inflamed tender and bulging upper and posterior canal wall is one of the most important signs of all, and its non relief by treatment is a sure indication for operation, as also is a sinus, whatever its location, leading into the mastoid Facial palsy is of interest but not important Epileptiform attacks are unusual, but indicate a possible cerebral pressure. Marked and rapid failure in the health is more apt to be found in adults than children The temperature is more liable to be elevated in children than in adults Rapid fluctuations of temperature over a range of several degrees is the most important sign of pyemia Other symptoms are the slow and thready pulse, out of proportion to the elevation of temperature, irregularity or sluggishness of pupils rapid failure of health and rigors or convulsions, all signs of intracranial pressure. Tenderness and edema over the occipital are very apt to be present when the sinus is thrombosed Bacteriologic examinations are not positive, but are important.

76 **A Xiphosternal Crunching Sound.**—This sound, which has not been noticed apparently in many text-books, is described by Solis-Cohen, who reports cases in which it was observed. It is difficult to describe. Before he selected the present designation he called it "friction-sound," "rough rubbing, clicking sound," "brushing sound," "scraping sound," etc. He is inclined to believe that it is due to white patches in the pericardium, and quotes Roberts from Allbutt's System of Medicine, and Gibson, in support of this view.

Archives of Ophthalmology, New York.

July.

81 Aplasia of the Papilla and Retinal Vessels, with a Peculiar Anomaly at the Macula in Eyes Otherwise Normal Alexander Duane.
82 *Retinal Rosette Formations of Neuroglia in Inflammatory Processes Brown Pusey.
83 *Cytotoxins and Sympathetic Ophthalmia Brown Pusey.
84 On Congenital Cysts of the Eyeball and Their Development. C. Hess
85 *Asthenopia Dependent on Neurasthenia and Hysteria. H Gradle
86 *Double Optic Neuritis Complicating Whooping Cough. William E. Gamble
87 Periscopic Lenses A. S Percival.
88 Polypus of the Lower Canaliculus S C. Ayres.
89 *The Extirpation of the Lachrymal Sac; Its Indications and Technic. Arnold Knapp
90 *The Mental Derangement which Is Occasionally Developed in Patients in Eye Hospitals Charles J. Kipp.

82. **Retinal Rosette Formations.**—Pusey describes a case analogous to those already described by Murakami of these rosette formations associated with a pure inflammatory process. In the case reported an acute general inflammation of the globe followed an old irritative process. The rods and cones disappeared while the fibrous structures persisted, and even appeared to be increased. In the midst of these changes the rosettes occurred. He accounts for them by holding that they are due to folds in the retina, probably caused by shrinkage of the bands in the vitreous. He thinks they probably have been seen before, but their resemblance to the rosette formations of tumors has not been appreciated.

83. **Sympathetic Ophthalmia and Cytotoxins.**—Pusey reports experiments to test whether a heterotoxic serum for the eye can be obtained that might account for the phenomena of sympathetic ophthalmia. His results are negative, but they do not disprove the theory that toxic influences are at work in inducing this condition. There are possibly defects in the experiments which render these negative results inconclusive. He is waiting for an opportunity to try an injection of blood serum from the blood of a patient suffering with sympathetic ophthalmia into the blood of a monkey.

85. **Neurasthenic Asthenopia.**—Gradle describes the condition of asthenopia frequently met with in hysterical and neurasthenic cases in connection with more or less impaired health, anemia, neurasthenic conditions, etc. In a small proportion the discomfort was started in the illy-nourished and neurasthenic by a low grade of catarrhal conjunctivitis and in a large number of cases there was no error of refraction or insufficiency of accommodation. He speaks particularly of the value of mental treatment in these cases when glasses have failed.

86. **Optic Neuritis of Whooping Cough.**—In the four cases reported, optic neuritis occurred about the fourteenth day of the convulsive stage in one-half the cases, and in the other two after some weeks or months, the connection not being so manifest. Evidences of cerebral trouble, headache, etc., were present *in only* two cases. Gamble thinks optic neuritis in these cases is probably intraocular. The conclusions suggested are that optic neuritis complicating whooping cough seems to occur more frequently in girls, all his cases being in girls. It may occur with or without evidence of cerebral complication. The vision may or may not be disturbed. The prognosis as to sight is good when there is no cerebral complication. It seems probable that optic neuritis may result from the direct action of toxins or pertussis on the nerve-head.

89. **Extirpation of the Lachrymal Sac.**—Knapp enumerates the indications for this operation as chronic purulent dacrocystitis resistant to treatment, repeated attacks of acute dacrocystitis with abscess, whenever the sac is dilated whether the contents can be expressed or not, and lachrymal fistula. Either local or general anesthesia may be employed. He makes an incision just below the internal canthal ligament,

passing down and out along the prominent orbital margin for 1.5 to 2.5 cm. The ligament may or may not be divided. If it should be, care should be taken to join the divided parts at the termination of the operation to prevent the possible sinking in of the caruncle. The incision is carried down through the tissue until the sac is exposed. It is usually recognized by its pale red or bluish-red smooth uniform surface. Hemorrhage in the lower part of the incision may be annoying, but can usually be controlled by retraction and compression. The sac is isolated by blunt dissection from its inner wall, proceeding upward, and the cupola freed. It can be more or less lifted out of the fossa. The outer surface must be separated by cutting with small blunt scissors, the attachment above and outward to the canaliculi being carefully separated. It is cut off as low down in the lachrymal canal as possible, and the canal is thoroughly curetted with a small spoon. Then with reflected light a careful inspection is made for any remaining islet of mucous membrane, granulations, inflamed periosteum, or carious bone, which conditions should all be properly met and radically treated. Special care must be used to see that the top of the lachrymal fossa is perfectly clean. If the bone on the inner wall is diseased and superficial curetting be deemed not sufficient, a free opening should be made right into the nose. This enables the removal of the diseased bone and insures proper drainage. The operation is concluded by the exact approximation of the wound edges with two or three sutures, and the cavity is obliterated by pressure on it kept up in the dressings for the next two or three days. The difficulty varies according to the inflammation and adhesions present. Primary union with obliteration of the cavity can be secured in most cases.

90. **Post-Operative Mental Disturbance.**—Twelve cases are reported by Kipp of mental disturbance following operations on the eyes, occurring in both sexes, but mostly in males; the majority had passed middle age. The recovery was very speedy after the patients could be removed to their own homes. He reviews the literature of the subject, that is the ophthalmologic literature, but finds little by American authors. He thinks the cause of the delirium is largely psychic and due to preoccupation on the part of the patient prior to and after the operation. He calls it homesickness, nostalgia with suicidal and homicidal propensities. He has thus far not used restraint but thinks he may have to in future cases. The quickest way to restore the mental equilibrium is to send the patient home. If this is impossible transfer him to some other quarters and give him the society he is accustomed to as far as possible.

St. Louis Courier of Medicine.

July.

91 *The Operative Treatment of Closed Fractures of the Patella. T. W. Huntington.
92 *A Case of Painless Labor, with Special Consideration of the Cause of this Condition. Arthur N. Curtis.
93 *A Bloodless Case of Placenta Previa. W. G. Moore.
94 Diet in Summer Complaint. William F. Waugh.

91. **Fractures of the Patella.**—Huntington reviews the methods and criticises the subcutaneous suture operation as making no provision for toilet of the synovial cavity or adjustment of the aponeurotic fringes and as not by any means a security against germ infection. His routine method is similar to that described and followed by Stimson and other writers: making a transverse incision about 1 c.c. below the point of fracture, clearing the anterior chamber of clots and serum and sponging with small mounted gauze pads, avoiding irrigation as not only unnecessary, but even dangerous. The aponeurotic fringes are carefully everted and held by snap forceps. Any lacerations in the synovial membrane, which are very common, are carefully repaired by suturing with fine catgut. The fragments are then approximated and firmly held while the aponeuroses are sutured with a No. 2 chromicized gut, care being taken as to adjustment, the needle being carried from without inward toward the periosteum, thence under both edges of the fringe and brought out on the opposite side. It is then reversed and inserted about half an inch from the point of emergence, passing from without inward again under both fringes and out at the same distance from the point of original ingress and tied. This gives a mattress suture, the fringes being supported from below by the two lateral arms of the suture, and prevented from becoming re-engaged between the fractured surfaces. The everted edges of the two margins are thus adjusted so as to unite by a firm cicatrix. Another important end attained, he claims, is the prevention of the outward tilting of the fragments, and the securing of the best possible approximation of fractured surfaces. The external wound is closed by silkworm-gut sutures carried through the everted edges of the aponeurosis and thus obliterating the intervening dead space. Over a voluminous dressing, a plaster-of-paris splint is applied, extending from the upper thigh to the ball of the foot and left in place, unless temperature rises, until time for removal of the skin sutures. At the end of the second week in ordinary cases he would cautiously undertake passive motion. Progress will necessarily be slow until the end of the seventh or eighth week, at which time the normal range of the joint movement will be reestablished. He reports a number of cases, all successful.

92. **Painless Labor.**—Curtis reports a case of painless labor in a primipara with a child weighing eight pounds. The patient was neurotic. He explains the phenomenon on the bases of a peculiar anesthesia of the parts due to this neurotic condition. He alludes to the fact that painless labor may be due to hysteria and considers a condition of hysterical uterovaginal anesthesia, not interfering with normal contractions, as probably the cause in this and other like cases.

93. **Placenta Previa.**—In the case reported by Moore, half of the placenta, with about four inches of the cord, was pushed outside without any hemorrhage, and the patient gave birth to a living child of about seven or eight months' development. The other half of the placenta was found adherent to the os uteri and removed without difficulty or hemorrhage. Moore considers this case unique and explains it on the ground of a central implantation of the placenta, which, being thinner than usual, was sufficiently elastic to allow a small head to be engaged, dilating the os, which acted as a stopper until the placenta ruptured, permitting the body to follow it until delivery was completed.

Iowa Medical Journal, Des Moines.

July 15.

95 The Treatment of Intestinal Obstruction. Charles Woodhull Eaton.
96 *Spurious Tapeworms or Parasitism Due to Undigested Bananas. Walter L. Bierring and Henry Albert.
97 *The Sound of Muscular Contraction. Walter E. Scott.
98 Why Have There Been so Few Results from Original Scientific Research in State Hospitals for the Insane? J. U. Wherry.
99 A Contribution to the Literature of Dislocations of the Shoulder. Lewis Schooler.

96. **Spurious Tapeworm.**—Bierring and Albert noticed a peculiar appearance resembling a parasite which they thought probably might be *Tenia nana*, the smallest known tapeworm, but which Stiles proved to be the tissue from a banana. They give illustrations of the appearances.

97. **The Sound of Muscular Contraction.**—Scott describes the sound of muscular contraction, which he thinks is largely responsible for the general vesicular respiratory sound. He has never seen any allusion to this sound in any article on the subject. He has noticed it especially in tetanus, and its absence may be of value in the diagnosis of muscular degeneration, paralysis, atrophy, etc.

Interstate Medical Journal, St. Louis.

July.

100 *A Contribution to the Therapy of Enuresis. John Zahorsky.
101 *Some Experiences with Local and General Anesthetics. T. C. Witherspoon.
102 *The Blood in Diseases of the Digestive Tract. Albert E. Taussig.
103 Reports on Radiotherapy: 1. Cure of Epithelioma of the Tongue. 2. Result in the Treatment of Axillary Hyperidrosis. 3. A Cream Paste for X-Ray Burns. Martin F. Engman.
104 A Case of Suppurative Parotitis Complicating Pneumonia. C. J. March.

100. **Enuresis.**—Zahorsky notices the various methods that have been employed for urinary incontinence and favors the

cerebral theory of the disorder. The treatment which he has lately followed with considerable success is given by him as follows: Two doses of a diuretic during the day, one at 9 a. m. and the other at 2 p. m., usually the alkaline citrates with spirit of nitrous ether, but he has also used caffein and diuretin, and sodium benzoate. One dose of atropin at night, substituted sometimes by rhus aromatic or antipyrin. He also uses Prendergast's method of cold douching the back. It is too early to speak of positive results, which he promises in a future communication.

101. **Anesthetics.**—Witherspoon discusses the use of local anesthesia, for which he prefers eucain in most cases. It is not so toxic as cocain and can be sterilized by boiling. It is interesting to notice how little of the drug can be effective. He mentions a case of strangulated hernia operated on with 1/16 of a grain, and he is especially impressed with its effects in partial thyroidectomy. He has also operated with it in cases of empyema with great advantage and used the method in operations on the nerves of the lower extremities. When there is great irritability at the anus and lower rectum he has been rendered the greatest service by injections into the triangular open space at the lower end of the sacrum posteriorly, and in this way has operated on several fissures and fistulas of the rectum. He has tracheotomized the adult three times for the purpose of giving a general anesthetic afterward. In using an anesthetic on the mucous membrane or open surface he relies on cocain, and has no bad effects from its careful use. When general anesthesia is required he prefers chloroform unless contraindicated.

102. **Blood in Diseases of the Digestive Tract.**—Taussig sums up as follows:

> In esophageal affections there is usually no characteristic blood change. In gastric cancer the leucocyte count as such does not always give reliable information. The absence of a digestive leucocytosis, however, is significant, and would be more so if chronic gastritis with dilatation, and especially gastric atrophy, did not produce a similar picture. The latter affection is often characterized by the interesting changes of pernicious anemia. The other gastric affections produce no distinguishing blood changes. Of the intestinal disorders, it is, especially in appendicitis, that the leucocyte count is of value. Here suppuration is characterized by a marked leucocytosis, though this may be absent if the abscess is thoroughly encapsulated. On the other hand, both a mild and a desperately severe case of appendicitis fail to produce leucocytosis.

The blood examination in diseases of the digestive tract, while never giving such precise information as to supplant clinical observation, is often a valuable aid to diagnosis, and should not be neglected.

Southern California Practitioner, Los Angeles.

July.

105 *Treatment of Ununited Fractures of the Femur. LeMoyne Wills.
106 Vaginal Fistulæ. W. W. Beckett.
107 Ectopic Gestation. W. W. Roblee.
108 Clinic Results with Roentgen's Rays. Albert Soiland.
109 Child Life or Responsibility to Offspring. Kate Wilde.
110 Proper Hygiene in Our Schools from the Ophthalmologist's Point of View. W. E. Hibbard.
111 Some Observations Made on the Inspection of Schools. L. M. Powers.
112 Important Relations of Blood Pressure to Therapeutics. John A. Colliver.
113 A Study of Immunity, Ehrlich's Side-Chain Theory. F. M. Pottenger.
114 The Public School and the Growing Girl. Louis H. Clarke.

105. **Fractures of the Femur.**—The treatment of ununited fractures of the femur are especially noted by Wills, who reports a case and calls attention to the following points: 1. The futility of any treatment except incision, turning out the ends of the bone, freshening them and suturing with heavy silver wire or clamp. 2. The necessity for absolute immobility of the thigh and leg on body by a plaster spica or bandage from toe to waist. 3. The relaxation of calf muscles by flexion of the knee at an angle of 45 degrees. 4. The importance of equable pressure about the entire limb, especially at the seat of the fracture. In his case too large a fenestra was cut in the plaster bandage for drainage purposes. The result is, he thinks, the slight angularity which was observed.

Medical Fortnightly, St. Louis.

July 25.

115 President's Address, Tri-State Medical Society. Alexander Hugh Ferguson.
116 Report of a Case of Amebic Dysentery in Illinois, with Special Reference to "Acetozone" Treatment. R. L. Kurtz.
117 Torsion of the Testicles. W. W. Williams.

Clinical Review, Chicago.

August.

118 Two Cases of Multiple Neuritis. Sidney Kuh.
119 Pathogenesis of Locomotor Ataxia. (Continued.) G. B. Hassin.
120 Lectures in Gynecology. Franklin H. Martin.
121 Clinical Lectures on the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings

Occidental Medical Times, San Francisco.

July.

122 The Cure of Crosseyes. Vard H. Hulen.
123 The Value of Blood Pressure Observations in Surgery. Wallace I. Terry.
124 Typhoid Fever at Palo Alto and Stanford University. Ray Lyman Wilbur.
125 Suppression of the Urine Relieved by Decapsulation. George L. Eaton.
126 Homo Delinquens. (To be continued.) Kund Pontonpidan.

Carolina Medical Journal, Charlotte, N. C.

July.

127 Surgery of the Prostate Gland. A. J. Crowell.
128 Drugs and Whisky Habit and Treatment. S. M. Crowell.

Albany Medical Annals.

August.

129 Report of a Series of Cases from the Maternity Department of the Albany Hospital. William H. Happel.
130 A Case of Lipoma of the Tonsil. Clement F. Theisen.
131 A Note on the Embryonal Glandular Tumors of the Kidney. George Bulmer.
132 Acid Autointoxication Apart from Diabetes Mellitus. James F. Rooney.

American Medical Compend, Toledo, Ohio.

August.

133 Some Practical Thoughts on Infant Feeding. William A. Dickey.
134 The Baby's Cold. Park L. Myers.
135 The Baby; His Rights and Expectations. William W. Pennell.
136 The Wintering of Children. Mark Millikin.
137 Simple Cyst of the Kidney; Diagnosis and Treatment, with Report of Two Cases. Joseph F. Fox.
138 Stammering; Its Causes and Cure. J. S. Hanson.

Medical Herald, St. Joseph, Mo.

July.

139 *Medical Education in the United States. Frank S. Billings.
140 *A Study of a Case of Dual Personality. S. Grover Burnett.
141 A Layman on Antitoxin. E. W. Caldwell.
142 Treatment for Relief of Nasal Reflexes, with Report of Cases. F. W. Dean.

139.—This article appeared in THE JOURNAL, xl, p. 1271.

139.—This article appeared elsewhere. See THE JOURNAL of August 8, ¶53, p. 394.

Medical Times, New York.

August.

143 Malarial Fevers. W. C. Cole.
144 Colles' Fracture. F. D. Cartwright.
145 Uterine Curettage; Its Indications and Technic. W. G. Birchett.
146 Jottings from My Note Book. William Wormley.
147 Venereal Diseases. M. E. Fitch.
148 A Discussion on Nervous Subjects. A. R. Williamson.

Woman's Medical Journal, Toledo, Ohio.

June.

149 Temperature Course Unusual in Two Cases: First, in Woman Preceding Premature Delivery; Second, Case in Premature Infant. Anna E. Blount.
150 Problems in Sanitation. Martha Anderson.
151 The Late Dr. Emily Howard Stowe of Canada. Helen MacMurchy.

Kansas City Medical Record.

July.

152 The Bile Passages. M. P. Overholser.
153 The Early Diagnosis of Pulmonary Consumption and Its Importance. R. O. Cross.

FOREIGN.

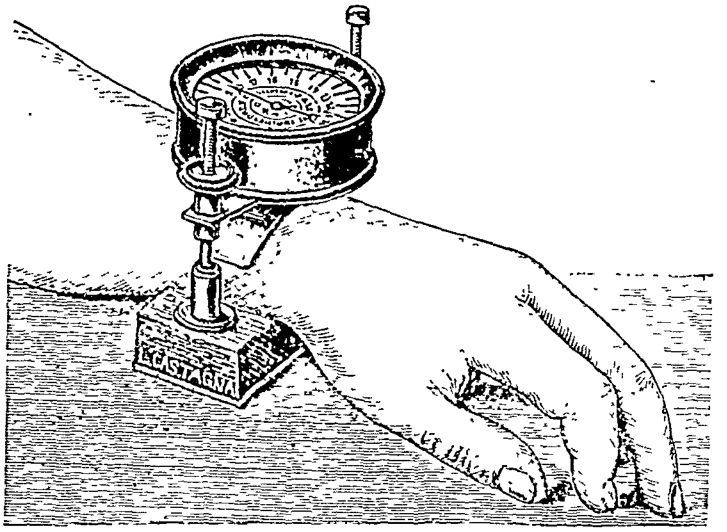
Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

August 1.

1 *President's Address, British Medical Association. The Evolution of Antiseptic Surgery and Its Influence on the Progress and Advancement of Bacteriology and Therapeutics. T. D. Griffiths.

The blood pressure should always be determined as a routine measure before giving chloroform and a venesection may be indicated. He adds that his pulse controller has been used by a number of operators and in more than 200 operations, and all express delight at the reliability of the instrument and the relief from anxiety it affords, enabling the narcosis to be safely steered to its conclusion. The language spoken by the apparatus is only imperfectly understood as yet, but time will undoubtedly render some such device as indispensable as the thermometer.



91. **Treatment of Face Presentations.**—Anselm compares the reports of various maternities and shows that expectant treatment has produced fully as good if not better results in the hands of Fehling, Bumm and v. Herff as Opitz's intervention.

92. **The Toe Reflex.**—Richter cites statistics to show that Babinsky's sign was positive in 1.8 per cent. of 500 healthy persons tested. Notwithstanding this occurrence of the sign in a few healthy persons, he regards the reflex as a very valuable presumptive evidence of some disturbance in the function of the pyramidal tracts.

93. **Improved Mask for Ether.**—Longard reports 2,700 ether narcoses in which his mask was used, and in only 2 was there a trace of the stage of agitation. He thinks the latter is due more to carbonic acid gas intoxication than to the ether, and this is avoided with his mask. His experience has shown that there are no contraindications to the use of ether by this method. Only 15 to 30 c.c. of ether are required for women and children, and 40 to 60 c.c. for men. An hour's narcosis requires 75 gm. for women and men and 100 gm. for hard drinkers.

94. **Malignant Scarlet Fever.**—Günther reports an epidemic of 150 cases of this disease, affecting adults mostly, and fatal in less than twenty-four hours in a large majority of the cases. All those in which the brain was affected from the start terminated in death.

96. **Tar to Reduce Dust in Roads.**—The experiments at Monaco and elsewhere with crude petroleum have not proved very successful as the results were not durable. But the application of boiling coal tar produces a coating like cheap asphalt, which has lasted eight months to date and fully answers the desired purpose. The total expense is only $80 for a kilometer of a road 15 feet wide, that is, about $128 a mile, with coal tar $6 to $10 a ton.

97. **Galvanocautery Punctures in Tuberculosis of the Throat.**—Grünwald explains that there is little hope of a cure unless the deep-lying infiltrations are drained. This is accomplished by puncture with the pointed galvanocautery. The immediate relief afforded is surprising, while there is slight if any reaction. He gives cuts of several cases. From two to five punctures are required.

105. **Antistreptococcus Serum.**—The long series of researches described have demonstrated that antistreptococcus serum acts by stimulating phagocytosis and absorption. The best results are attained with large doses in the early stage of acute streptococcus infection. Serum made from freshly cultivated human streptococci is the only one that is effective, but its results on animals can not be applied to man.

107. **Anastomotic Circulation of the Heart.**—Galli reports a case at Baccelli's clinic in which the mouth of the right coronary opening into the aorta had been entirely obliterated by a sclerous neoformation. The closest scrutiny failed to reveal any sclerous alterations in the right heart and only a single sclerous focus in the rear of the left heart. The patient was a syphilitic and had had articular rheumatism twice. Galli gives cuts of the heart showing an anastomosis between the right and left coronaries which explained the lack of nutritional disturbances.

108. **Massage of Recent Fractures.**—Jordan is an advocate of early massage, and states that out of 73 patients, of whom 27 were over 40 years old, 67 recovered complete working capacity after fracture of arm or shoulder, and only 2 are much incapacitated. His principles are: for the upper extremity, massage and mobilization, supplemented by fixation after each massage in case of fracture of a joint or of the shaft without material dislocation. For the leg, massage should be restricted to the joints, in combination with a walking apparatus. In fractures of the long bones of the leg, massage is only a preliminary.

114. **Morphin-Scopolamin Narcosis in Gynecology.**—Flatau tabulates the details of 47 cases in which this method of narcosis was employed, and concludes with the warning that it is unsuitable and dangerous for the majority of physicians, for surgical intervention and especially for obstetric operations.

115. **New Material for Protection Against X-Ray Burning.**—The sheet lead used to protect the sound skin in *x*-ray exposures leaves smutty marks on skin and clothing, looks unsightly and dirty even when new, and soon cracks. Holzknecht has remedied all these defects by having a coating of vulcanized rubber applied on each side of the sheet lead. This rubber-coated lead lasts indefinitely without cracking. He finds the most convenient shape to be a long rectangle with a semicircle cut out at one end. By having a number of these sheets with semicircular openings of different sizes they can be arranged around the part to be exposed leaving an opening of the desired diameter.

117. **Epidural Injections.**—Strauss tried this method in the mercurial treatment of 10 syphilitics, but soon abandoned it as possessing no advantages over the usual methods. But in enuresis, impotence, sexual neurasthenia and allied conditions the results were remarkable improvement or complete cure. In 7 cases of incontinence only one or two injections were required. In 2 cases of nocturnal emissions one was cured and the other much improved by the same, as also 2 cases of impotency. A patient with general sexual neurasthenia was essentially improved, but a second one of this class failed to derive any benefit. He injects 5 to 30 c.c. of a solution of cocain, .01 gm.; sodium chlorid, .2 gm., and distilled water to 100 gm., adding two drops of 5 per cent. aq. carbol. He uses a platinum-iridium needle 6 cm. long and 1 mm. thick with the syringe illustrated in THE JOURNAL of July 25, p. 287. He makes the injection slowly by puncturing the sacral canal, and as it is very tolerant the injection can be soon repeated; one to five days is his average interval.

121 **Yohimbin as a Local Anesthetic.**—Magnani corroborates the testimony of others in regard to the value of yohimbin for local anesthesia. In his ophthalmologic practice he found that it affected the tissues like tropacocain while it resembled cocain in its anesthetic effect.

Hygiea, Stockholm.

123 (No. 4.) Physiologic Action of Alcohol. C. G. Santesson.—Om alkoholens fysiolgiska verkningar.
124 *Leucocytosis in Appendicitis. G. Nilson.—Kasuistikt bidrag till fragan om leukocytosens-betydelse vid appendicit.
125 Om transfixion af iris. A. Dalen. Three cases.
126 Our Beverages. E. Almquist.—Om verkan af smärre alkoholdoser samt om vara läskedrycker.

127 (No. 5.) *Cancer Research. O. Sandberg.—Studier om Kräftan.
129 *Om operation för symblefaron enligt May. J. Landström.
130 (No. 6.) History of Abdominal Gynecological Operations. F. Westermark.—Om de viktigaste gyn. bukoperationernas utveckling.
131 Tyfoid-epidemien i Ronneby, 1901. J. Dahl.
132 *First Aid in Germany and Austria. E. Boman.—Om frivilliga sjukvårdsföreningar, etc.
133 *Psychoses on Foundation of Syphilis. H. Marcus.—Akuta förvirringstillstand pa syfilitisk grund. (Commenced in No. 5.)
134 (No. 7.) Alcohol and Muscular Effort. J. Widmark.—Om sprit och idrott.
135 Diagnosen af cancer ventriculi. E. Rodhe.
136 *Mercuriololja-ett nytt kvicksilferinjektions-medel. M. Möller.
137 *Oleum mercurioli (90 per cent. Hg.). A. Blomquist.
138 Six Cases of Extra-uterine Pregnancy.—Extrauterint hafvandeskap.
139 Campaign Against Tuberculosis. R. v. Post.—Kampen mot tuberkulosen ute och hemma.

124. The Leucocytes in Appendicitis.—Nilson reports the details of 17 cases showing the value of the blood count as an aid in diagnosing. In 9 cases there proved to be no suppuration and the leucocytes ranged from 7,500 to 18,000 during the first two days and then rapidly subsided to normal. In only one instance was the number 20,000 to 26,000 for five days. The appendix was obliterated by catarrhal inflammation, but there was no abscess. In the other cases the leucocytes numbered 18,000 to 29,700, and the appendix was found perforated and inclined to gangrene. An abscess in the groin was operated on in one patient, with a leucocytosis of 14,500 to 23,000. The whites still remained above 12,800 and a subphrenic abscess was discovered and evacuated six days later. The whites still continued to rise and reached 21,200, when the appendix was extirpated a week later. The leucocytosis continued and rose to 26,000, but after evacuation of a small gaseous abscess found in the Douglas pouch, the whites dropped to 10,000 in two days after having been continuously in the neighborhood of 20,000 for nearly a month. In 2 cases of diffuse purulent peritonitis the leucocytes reached 27,200 and 40,000.

127. Cancer Research.—Sandberg's article is a study of the 2,153 cases of cancer treated at the Sabbatsberg Hospital, 1879-1901. Less than one-third were on male subjects and in half of these the cancer was located in the stomach (315 out of 623 male patients). About 1.71 per cent. of all the male patients received during this period were affected with cancer, and 4.32 per cent. of the women patients, the total number of patients being 71,839. He gives the particulars, remote results after operations, etc. Cancer in the stomach developed without metastases in 52.5 per cent. of the 229 cases in women, and in 54.7 per cent. of the 315 male cases. Metastases were most frequent with cancer in the liver, and they were found in 101 out of 483 cases of cancer of the uterus, and in 131 out of 288 on the mamma.

129. May's Symblepharon Operation.—Landström applied in 4 cases the operation suggested by May in 1899. He regards it as the best method to date, although not ideal. The results were extremely satisfactory in his cases, as he shows by photographs.

132. First Aid in Germany and Austria.—Boman describes the volunteer "Samaritan" associations in the German-speaking countries and the training of their members in the first aid to wounded persons and in emergencies of various kinds. He urges similar organizations elsewhere.

133. Acute Psychoses in Syphilis.—Marcus' article is an exhaustive study of this subject and its literature. He has personally observed 11 cases and analyzes them and 6 others reported by Brewer and Bailey, Jolly, Fournier or others. All recovered under specific treatment except 2. He gives cuts of the autopsy findings in one case, showing the typical circumscribed basal meningitis, etc. His patients were from 26 to 53 years old. There was no hereditary taint or abuse of alcohol in the majority.

136 and 137. Mercuriol Oil.—This new preparation of mercury in the form of an aluminum magnesium amalgam, contains 90 per cent. mercury. It is similar to mercuriol, but is an oil and specially adapted for injecting purposes. Möller has used it in thousands of cases and has found it extremely effective with the minimum of symptoms of local irritation.

Russky Vratch, St. Petersburg.

140 (No. 49.) Study of "Secretin." L. B. Popelsky.—O sposobye dyeistvie HCl, etc.
141 Differential Significance of Bronchial Secretions. T. G. Janovsky.—K razpoznavatelnomu zvatcheniyu bronkhialnykh slyepkov.
142 Severe Heart Affections Indication for Artificial Interruption of Pregnancy. J. Y. Jakub.—Bolyezni serdtza, etc.
143 Coagulating Influence of Ferments on Peptone. N. A. Sakharoff.—O svertyvayushtchem dyeistvie brodili na peptony.
144 (No. 50.) Estimation of Impairment of Working Capacity by Eye Traumas. E. P. Braunstein.—Ob umensheniì trudosposobnosti pri povrezhdeniya glaz.
145 Study of Influence of Dyes of Aromatic Series on Digestion. A. I. Vinogradoff.—K voprosu o vliyanii iskustvennykh krasok aromat. ryada na pishtchevarenie.
146 (No. 51.) General Causes of Gastrointestinal Affections. A. A. Trzhetzyesky.—Obshtchiya pritchiny zhelud.-kish. zabolyevanii.
147 Eye Disturbances in Experimental Ergot Intoxication. K. K. Orloff.—Ob ezmyeneniakh pri chron. otravlenii sporynei e cya preparatami.
148 Vaginal Cesarean Section with Cancer of Cervix. F. K. Weber.—Vlagalishtchnoi kesarskoe syetchenie pri rakye sheiki matki, etc.
149 (No. 52-53.) Acute Glaucoma After Cataract Operations. M. I. Auerbach.—Ostraya glaukoma poslye operatzii katarakt.
150 Coincidence of Measles, Rötheln and Scarlatina. S. V. Vitlin. —Sovmyestnoe tetchenie ostro-likhoradotchnykh sypei. (Concluded.)
151 (II, 1.) K technikye laparocoeliotomia. V. S. Gruzdeff.
152 Superior Results of Electrolysis in Treatment of Cicatricial Strictures of Esophagus. Y. B. Seidovitch.—Lyetchenie rubtzevyk suzhenii pishtchevoda electrolyzom.
153 Electric Light Treatment of Gynecologic Affections. A. I. Orloff.—O lyetchebnom vliyanii byelova elektritcheskova svyeta (lampotchek nakalivaniya) pri nyekotorykh vospalitelnykh zabolyevaniyakh matki i pridatkov.
154 Potassium Permanganate as Specific Antidote to Acute Morphin and Opiate Poisoning. S. A. Finkelstein.—Kali hypermang. kak spec. protivoyadie pri ostrykh ogravleniyakh morphiem i opiatami.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

The Latin Grammar of Pharmacy and Medicine. By D. H. Robinson, Ph.D., Late Dean of the School of Arts, and Professor of Latin Language and Literature, University of Kansas. With an Introduction by L. E. Sayre, Ph.M., Professor of Pharmacy in, and Dean of Department of Pharmacy, University of Kansas. Fourth Edition, with Elaborate Vocabularies. Thoroughly Revised by Hannah Oliver, A.M., Assistant Professor of Latin, School of Pharmacy, University of Kansas. Cloth. Pp. 277. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1903.

A Thesaurus of Medical Words and Phrases. By Wilfred M. Barton, M.D., Assistant to Professor of Materia Medica and Therapeutics, and Lecturer on Pharmacy, Georgetown University, Washington, D. C.; and Walter A. Wells, M.D., Demonstrator of Laryngology and Rhinology, Georgetown University, Washington, D. C. Flexible Leather. Pp. 534. Price, $2.50 net; with Thumb Index, $3.00 net. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

Diseases of the Ear. A Text-book for Practitioners and Students of Medicine. By Edward Bradford Dench, Ph.B., M.D., Professor of Diseases of the Ear in the University and Bellevue Hospital Medical College. With 15 Plates and 158 Illustrations in the Text. Third Edition, Revised and Enlarged. Cloth. Pp. 718. Price, $5.00. New York and London: D. Appleton & Co. 1903.

The Principles of Obstetrics. A Practical Manual for the Student and General Practitioner. By Stanley Perkins Warren, M.D., Portland, Me., Obstetric Surgeon to the Maine General Hospital. Superbly Illustrated by 165 Line and Half-tone Engravings. Cloth. Pp. 385. Price, $3.00 net. New York: William Wood & Co.

King's Manual of Obstetrics. By A. F. A. King, M.D., Professor of Obstetrics and Diseases of Women in the Medical Department of the Columbian University, Washington, D. C. Ninth Edition, Revised and Enlarged. Cloth. Pp. 628. Price, $2.50 net. Philadelphia and New York: Lea Brothers & Co. 1903.

The Exact Science of Health Based Upon Life's Great Law. By Robert Walter, M.D. Vol. I.—Principles. Leather. Pp. 302. Price, $2.00. New York: Edgar S. Werner Publishing Company. London: Kegan Paul, Trench, Trubner & Co., Ltd.

A Nurse's Handbook of Obstetrics. For Use in Training Schools. By Joseph Brown Cooke, M.D., Fellow of the New York Obstetrical Society. Cloth. Pp. 391. Price, $2.00. Philadelphia and London: J. B. Lippincott Company. 1903.

Plain Hints for Busy Mothers. By Marianna Wheeler, Superintendent of the Babies' Hospital, New York. Illustrated by F. M. Miller. Flexible Leatherette. Pp. 54. Price, 35c. New York: E. B. Treat & Co. 1903.

Thirteenth Annual Report of the Eye, Ear, Nose and Throat Hospital of New Orleans, La. Jan. 1, 1902, to Dec. 31, 1902.

Paper. Pp. 64. New Orleans: A. W. Hyatt Stationery Mfg. Co., Ltd. 1903.

FIRST BIENNIAL REPORT OF THE MONTANA STATE BOARD OF HEALTH. From Its Creation, March 15, 1901, to Nov. 30, 1902. Paper. Pp. 114. Helena: Independent Publishing Company.

THE WELCOME PHYSIOLOGICAL RESEARCH LABORATORIES. Founded 1894. Walter Dowson, M.A., M.D., Director. Cloth. Pp. 36.

The Public Service.

Army Changes.

Movements of Officers of the Medical Department, U. S. A., under orders from the Adjutant-General's Office, Washington, D. C., for the two weeks ending Aug. 8, 1903:

Adair, George W., lieut.-colonel and district surgeon-general, is relieved from duty in the Division of the Philippines, to take effect August 31, and will proceed to the United States and report by telegraph to the Adjutant-General of the Army for further orders.

Bosley, John R., first lieut. and asst.-surgeon, now at Fort McPherson, will report at that post for duty.

Brown, Orville G., first lieut. and asst.-surgeon, now at Washington, D. C., will proceed to Fort Monroe for duty.

Brown, W. E., contract surgeon, is granted leave of absence for two months from about September 1.

Chamberlain, Weston P., first lieut. and asst.-surgeon, is granted leave for one month.

Cable, G. L., contract surgeon, is granted an extension of leave for ten days.

Foster, Charles L., first lieut. and asst.-surgeon, now at Fort Myer, will report at that post for duty.

Fanning, George J., contract surgeon, on his relief from duty at Whipple Barracks by First Lieut. Henry D. Thomason, asst.-surgeon, will proceed to his home at Cacatow, Ariz., for annulment of contract.

Geddings, Edward F., first lieut. and asst.-surgeon, is relieved from duty at Fort Brady, to take effect on the return of First Lieut. William Roberts, asst.-surgeon, to duty at that post, and will then proceed to Fort Keogh, to relieve First Lieut. Paul C. Hutton, asst.-surgeon.

Gregory, Junius C., first lieut. and asst.-surgeon, is granted leave for one month, to take effect when he is relieved from duty at the U. S. General Hospital, Washington Barracks.

Hutton, Paul C., first lieut. and asst.-surgeon, will proceed to Pekin, China, and report to the commanding officer of the U. S. legation guard for duty, to relieve First Lieut. Frederick M. Hartsock.

Hartsock, Frederick M., first lieut. and asst.-surgeon, will proceed to the United States and report by telegraph to the Adjutant-General of the Army for further orders.

Hallock, Harry M., captain and asst.-surgeon, now at the U. S. General Hospital, Presidio, is relieved from further duty in the Division of the Philippines, and will proceed to Fort Porter for duty.

Hutton, Paul C., first lieut. and asst.-surgeon, is granted leave of absence for one month.

Jones, Percy L., first lieut. and asst.-surgeon, now at Atlanta, Ga., will proceed to Fort Monroe for duty.

Jones, John F., contract surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month, to take effect on his relief from duty at Fort Washakie.

Kieffer, Charles F., captain and asst.-surgeon, will report to Major William H. Arthur, surgeon, president of the examining board at the Army Medical Museum Building, Washington, D. C., for professional examination and physical re-examination for promotion.

Lovering, Robert C., first lieut. and asst.-surgeon, now at Philadelphia, Pa., will proceed to Fort Leavenworth for duty.

Morris, Samuel J., first lieut. and asst.-surgeon, now at Fort Grant, will proceed to San Francisco and report for transportation to the Philippine Islands, where he will report for assignment to duty.

Mabee, James I., first lieut. and asst.-surgeon, now on temporary duty at Presidio, is assigned to permanent duty at that post.

Purnell, Harry S., first lieut. and asst.-surgeon, now at Fort Wingate, will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

Pinkston, O. W., contract surgeon, is granted leave for one month, to take effect on the termination of the season of target practice at Camp Stoney Point, N. Y.

Peed, George P., first lieut. and asst.-surgeon, now at Portsmouth, Va., will proceed to Washington Barracks, and report at the U. S. General Hospital for duty.

Porter, Ralph S., first lieut. and asst.-surgeon, now at Chicago, will proceed to Fort Leavenworth for duty.

Palmer, Fred W., first lieut. and asst.-surgeon, now at Brooklyn, Mich., will proceed to Jefferson Barracks for duty.

Pipes, Henry F., first lieut. and asst.-surgeon, now at Fort Barrancas, will report at that post for duty.

Siler, Joseph F., first lieut. and asst.-surgeon, now at Fort McPherson, will report at that post for duty.

Stedman, Chester J., first lieut. and asst.-surgeon, now at Fort Adams, will report at that post for duty.

Smith, Charles F., contract surgeon, is relieved from duty at Fort Leavenworth, and will proceed to his home, Whitehall, Mich., for annulment of contract.

Smith, Charles F.. contract surgeon, is granted leave of absence for one month.

Sabin, Wallace E., contract surgeon, is relieved from duty at Fort Apache and will proceed to Vancouver Barracks for duty.

Richards, J. W., contract surgeon, is granted leave of absence for one month on surgeon's certificate.

Ten Eyck, Benjamin L., major and surgeon, having been found by an Army retiring board incapacitated for active service on account of disability incident thereto, his retirement from active service, Aug. 3, 1903, under the provisions of Section 1251, Revis Statutes, is announced. Major Ten Eyck will proceed to his hom

Trenholtz, C. A., contract surgeon, is granted an extension o leave for fourteen days.

Van Kirk, Harry H., contract surgeon, is relieved from furthe duty at Fort Wingate, and will proceed to Fort Washakie and report for duty, to relieve Contract Surgeon John F. Jones, wh will proceed to Fort Schuyler.

Whaley, Arthur M., first lieut. and asst.-surgeon. now at Sault Ste. Marie, Mich., will proceed to Fort Sheridan for duty.

Winter, Francis, captain and asst.-surgeon, is relieved from duty as attending surgeon and examiner of recruits at St. Louis, Mo., to take effect on the expiration of his present leave, and will then proceed to Fort Huachuca for duty.

Wood, Halsey L., contract surgeon, is relieved from duty in the Department of the Columbia, and will proceed to his home, New York City, for annulment of contract.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended Aug. 8, 1903:

Surgeon L. W. Spratling, Asst.-Surgeons C. H. DeLancy and E. M. Blackwell and Pharmacist C. E. Reynolds, detached from the *Columbia* and ordered to the *Hancock*.

Asst.-Surgeon H. L. Brown, detached from the Naval Proving Ground, Indian Head, Md., and ordered to the Navy Yard, Washington, D. C.

Asst.-Surgeons K. Ohnesorg and J. T. Kennedy, ordered to the Naval Academy.

A. A. Surgeon C. T. Grayson, ordered to the Naval Proving Ground, Indian Head, Md.

Pharmacist J. Cowan, detached from the Navy Yard, Boston, Mass., and ordered to the Naval Magazine, Iona Island, N. Y.

Pharmacist E. T. Morse, detached from the Naval Magazine, Iona Island, N. Y., and ordered to the Navy Yard, Boston.

Pharmacist E. May, ordered to the Naval Hospital, Norfolk, Va.

P. A. Surgeon J. A. Guthrie, detached from the *Vicksburg* and ordered to the *Solace*.

Asst.-Surgeon R. H. Michels, detached from the *Solace* and ordered to the *Wilmington*.

Asst.-Surgeon G. M. Mayers, detached from the *Isla de Cuba* and ordered to the *Vicksburg*.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 8, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, July 25-August 1, 3 cases.
California: Los Angeles, July 18-25, 5 cases.
Illinois: Chicago, July 25-August 1, 4 cases; Danville, July 25-August 1, 1 case.
Louisiana: New Orleans, July 25-August 1, 3 cases.
Maryland: Cumberland, July 1-31, 7 cases, 1 death.
Massachusetts: Fall River, July 25-August 1, 7 cases, 1 death.
Michigan: Grand Rapids, July 31-August 1, 1 case.
Missouri: St. Louis, July 25-August 1, 2 cases.
New Hampshire: Manchester, July 31-August 1, 2 cases.
New Jersey: Camden, July 31-August 1, 1 case.
Ohio: Cincinnati, July 24-31, 1 case; Toledo, July 25-August 1. 1 case.
Pennsylvania: Scranton, July 25-August 1, 3 cases.
Utah: Salt Lake City, July 31-August 1, 2 cases.
Wisconsin: Milwaukee, July 13-August 1, 14 cases.

SMALLPOX—FOREIGN.

Austria: Prague, July 11-18, 2 cases.
Belgium: Brussels, July 11-18, 4 deaths.
Brazil: Rio de Janeiro, June 29-July 12, 14 deaths.
Colombia: Bocas del Toro, July 14-21, 1 case, 1 death.
Ecuador: Guayaquil, July 4-11, 1 death, sporadic.
Germany: Bremen, August 1, 1 case on Steamship Bremen.
Great Britain: Dublin, July 11-18, 6 cases, 1 death; Manchester, July 11-18, 2 cases, 1 death; Newcastle-on-Tyne, July 11-18, 4 cases.
India: Bombay, June 23-July 7, 28 deaths; Calcutta, June 27-July 4, 1 death.
Mexico: Tampico, July 18-25, 1 death.
Russia: Moscow, July 4-11, 4 cases, 3 deaths; Riga, May 1-31, 24 deaths; St. Petersburg, July 4-18, 37 cases, 3 deaths.
Spain: Barcelona, June 20-July 4, 4 deaths.

YELLOW FEVER.

Colombia: Panama, July 13-27, 7 cases, 2 deaths.
Costa Rica: Limon, July 16-23, 9 cases, 4 deaths.
Mexico: Coatzocoalcos, July 18-25, 2 cases; San Luis Potosi. July 13, present; Tampico, July 18-25, 40 deaths; Vera Cruz, July 18-25, 34 cases, 17 deaths; Yucatan, July 15, present.

CHOLERA.

India: Bombay, June 30-July 7, 1 death; Calcutta, June 27-July 4, 27 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, July 19, 1 death.

PLAGUE—FOREIGN.

Africa: Cape Colony, June 6-13, 5 cases, 4 deaths.
China: Amoy, June 20, 50 deaths daily, estimated.
Egypt: Alexandria, June 27-July 4, 4 cases, 1 death; Port Said. June 27-July 4, 1 case; Tantah, June 27-July 4, 2 cases, 2 deaths.
French Indo-China: Tonquin, June 10-23, 5 deaths.
India: Bombay, June 23-July 7, 178 deaths; Calcutta, June 27-July 4, 15 deaths; Karachi, June 14-21, 9 cases, 8 deaths.
Japan: Yokohama, June 20-27, 2 deaths.

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